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Educating the Modern Higher Education Administration Professional

The Helicopter Parent (Part 2):
International Arrivals and Departures

**An Organizational and Qualitative Approach
to Improving University Course Scheduling**

**Post-Implementation Success Factors for Enterprise
Resource Planning Student Administration
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The Helicopter Parent

The phenomenon of helicopter parenting has been widely reported, yet the research literature is anemic on the topic. Based on interviews and focus groups involving 190 academic and student services professionals, this article continues by discussing the social, psychological, economic, and cultural factors that influence helicoptering; exploring theoretical views of parenting; and providing advice for college and university faculty, professionals, and administrators.

INTERNATIONAL ARRIVALS AND DEPARTURES

The more than 117,000 hits on a recent Google™ search for the term “helicopter parent” attests to how thoroughly this topic has permeated the lexicon here and abroad. In Part One of this article, we reported on the thin volume of research on the subject. We also developed and discussed a typology based on focus groups and interviews involving 190 academic and student services staff members. In this second article, we explore the global factors that have influenced the rise of helicoptering, provide advice for professionals, and discuss applicable theories of parenting.

DISCUSSION: THE RISE OF HELICOPTERING

Participants in our study suggest that the dramatic increase in media stories about helicopter parenting reflects the growth of the phenomenon on college campuses. In our search for broad explanations for the over-involvement of some parents in their students’ lives, we identified seven factors that individually and collectively explain the increase in helicopter parenting. (For the purposes of this article, we use the term “student” rather than “child.” “Student” signals an older child with presumed higher levels of autonomy and maturity.)

First are the seismic demographic shifts in America: Not only are there more eighteen-year-olds, but a larger percentage of them than ever before aspires to attain a col-

lege education. Baby Boomers (individuals born between 1948 and 1967) went to college in larger numbers than any previous generation. Their tendency to delay marriage and childbearing resulted in a “Baby Boom Echo” (individuals born between 1976 and 1998) and an Echo “boomlet” (the grandchildren of Boomers). The leading edge of the Echo entered college in 1994, with the cohort peaking in 2006. The Echo boomlet, also known as the Millennial birth cohort, will continue until 2028, with an average of 4 to 4.8 million births per year (U.S. Department of Education 2000). Further, higher birth rates among some groups and increased immigration have contributed to population growth. Changes in birth rates alone account for approximately 50 percent of the increase in the number of college-eligible 18- to 24-year-olds. As a result of encouragement by parents, other family members, mentors, and educators, students today have higher educational aspirations. For example, in 1990, 39.1 percent of all 18- to 24-year-old high school graduates attended college immediately after graduation; in 2004, the percentage had increased to 45.8 (NCES 2007).

As a result of these demographic shifts, students and parents perceive extensive and cut-throat competition to be accepted at a “good” college. This perception may be based on a lack of knowledge of the many post-secondary

education opportunities that exist. Rejection anxiety and a lack of understanding of the admissions process are significant drivers of helicopter-type behavior through the college admission process.

Second, families and parenting have changed. Parents fear that their children may make “wrong” academic or career decisions and so end up overeducated and underemployed. This fear leads to overchaperoning and a reluctance to “let go.” Indeed, many parents continue to “helicopter” even after their students have received bachelor’s degrees and either have entered the labor market or have enrolled in graduate or professional school.

In addition, the composition of the typical family is different. With fewer children, many families are lavishing more attention on each child. Parents strive to get their children into the best preschools, the best school districts, the highest status sports, and the best community service experiences. Some parents pride themselves on never having missed a school play or an out-of-town soccer game, no matter the financial and other costs. Horwitz (2007), in his capital market theory of the family, suggests that parents receive “self-actualization” (Maslow 1943) through their children and therefore have an incentive to micromanage their children’s accomplishments.

Third, advances in technology enable helicoptering. From cell phones to parents’ masquerading as students online using purloined passwords, information is available 24 x 7. Armed with more data, some overzealous parents bypass communicating with their children because their children’s professors, academic advisors, or even college presidents are only a phone call or e-mail away.

Mullendore (Keppler, Mullendore and Carey 2006) describes the cell phone as the “world’s longest umbilical cord.” Junco and Mastodicasa (2007) found that in the average phone call, college students just “check in” with their parents and talk about academics and social life. However, emotional “dump calls” (Kastner and Wyatt 2002), in which students unload their frustrations, can cause parents to panic and go into full helicopter mode. In reality, these calls may be more of a visceral reaction to everyday stress than a serious sign of distress on the part of the student.

In this “wired world,” parents can and do masquerade online as their children. Parents may complete their students’ online profiles for roommate matching; some re-

search their children’s roommates via Facebook or other electronic media and then masquerade as their children when requesting a roommate reassignment. Parents also can register online for their students, monitor their academic progress, and compose and answer e-mail. If the parent is savvy enough, she can even log into the course software and the registrar’s system and learn individual course grades as they are posted. (Of course, such electronic masquerades violate university computing policy.) Rather than turning parents into felons, many colleges urge students to approve a “guest log-in” which allows the “guest” (parent) to retrieve student information (Baker 2008).

The fourth factor is a variety of structural changes in society. Globalization and outsourcing have exported well-paying blue collar and technical jobs outside of the United States. Even the grading of college papers, course development, and instruction can be contracted out half-way around the world. Parents foresee diminishing economic returns for their children’s education, a less stable professional job market, and an entire generation who may be less well off socially and economically. Every parent’s worst nightmare is an impoverished and unemployed adult child who must move back into his parent’s home, often with a significant other, children, and pets in tow.

The fifth factor is a psychological shift. With college students now in a longer period of “emerging adulthood” (Arnett 2007), less responsibility may be expected of them. In her study of 18- to 28-year-olds, sociologist Barbara Schneider (Personal communication 2007) found that some young people go into an “idle” or “stuck” mode. If an idler has an overbearing parent, extreme helicoptering may occur. The parent may feel that the student is not psychologically capable of self-starting, so the parent justifies taking over many of the child’s responsibilities, such as college applications, term papers, and job applications. Although the number of “idlers” is believed to be small, their parents may become harmfully enmeshed in their students’ lives (Toepfer 2008).

Sixth, education has become a commodity (Aronowitz 2000; Slaughter and Leslie 1999; Slaughter and Rhoades 2004). Parents and students are consumers. Teachers, professors, and support staff are perceived as little more than customer service representatives. Parents/customers want individualized attention and instruction. In return for their considerable financial investment in higher edu-

cation, consumers want results: good grades, highly paid internships, jobs with the best firms, admission to the best graduate and professional schools, and career and personal success. The encroachment of the consumer culture into higher education is a major cause of both helicopter behavior on the part of parents and frustration on the part of educators who reject the suggestion that higher education can be bought and sold like a commodity.

Seventh, child safety has increased in importance since the highly publicized abduction of Adam Walsh from a Florida mall in 1981. (Twenty-five years later, Congress passed the comprehensive Adam Walsh Child Protection and Safety Act of 2006.) After Adam's disappearance, the world became a different place: Where before children had ridden their bikes on neighborhood streets or gathered to play baseball on sandlots, they instead were protected by fenced yards and constant parental supervision, or "overchaperoning." Likewise, faced with extreme fear in the wake of 9/11, some parents sought to control every aspect of their children's environment in an effort to decrease the chances they might fall victim to random and senseless violence. When students go to college, their parents continue their role as protector (and "superhero"), vetting campus safety standards with great scrutiny. The result has been chaos for residence hall directors, food service personnel, study abroad and internship coordinators, and campus safety personnel as some parents demand individual audiences with each and every one of these groups in their effort to properly protect their children.

The events at Virginia Tech and other universities convinced parents that colleges were not good protectors of students in their care. So parents set themselves up as safety patrol guards, not trusting school or public officials to be suitably vigilant. How many locked security doors stand between students who live in residence halls and the general public? Do residence halls have safety phones and dead-bolt locks? How effective is the campus police force? What are the response times for police and fire fighters? What are the campus crime statistics? How safe are classrooms? What policies do universities have for removing potentially violent or disturbed students, faculty, or staff? Concerned that they must insinuate themselves as guardians into their students' lives, a few parents have installed nanny cams in residence hall rooms and LoJacks in cars as part of their effort to monitor their children's behavior and safety.

Helicopter parenting is a complex behavior influenced by a variety of interwoven social, economic, psychological, and cultural variables. While we have identified seven major factors, others undoubtedly will come to light as additional research on the topic is conducted.

METHODOLOGICAL AND THEORETICAL ISSUES

In 2007, George Kuh of Indiana University observed that students with helicopter parents were "more satisfied with every aspect of their college experience, gained more in such areas as writing and critical thinking, and were more likely to talk with faculty and peers about substantive topics" (Mathews 2007) than their counterparts. *Washington Post* writer Mathews (2007) observed, "Parents, college officials, and college-family relations experts agree that the study is a blow to the widely accepted notion that little good can come from meddling in college children's lives." Mathews's comments highlight the methodological and theoretical challenges to studying the relationships between college students and their parents.

According to the professionals we interviewed, a conversation with a helicopter parent often begins "Don't tell my child I called...." Likewise, students may say "Please don't tell my parents that...." Thus, both parties may be oblivious to the confidentiality demanded by the other. Indeed, students may never know that their parents intervened on their behalf. It is difficult, therefore, to gain a true picture of the nature, scope, effectiveness, and emotional toll of helicoptering without interviewing students and their parents.

Another methodological issue is the definition of a helicopter parent. The term does not necessarily denote destructive behavior; as noted previously, helicoptering can be positive or negative. What is missing, however, is a clear definition of helicoptering and indications of when it is negative. In the popular press, cute names such as "lawn mower," "Blackhawk parent," "agent," and "white knight" are used with little definition. Further, as Wolf, Sax, and Harper (2009) indicate, "Levels of parental involvement that may be considered 'excessive' for some students could for other students represent an important source of academic and social support. We lack an understanding of which forms of involvement are most beneficial and under which circumstances, and for which students." With the many issues inherent in the study of parent involve-

ment, measurement of the phenomenon is difficult and complex.

Theoretical considerations also cloud discussions of helicopter parenting. Two distinct theories inform studies of parent/college student relationships: separation/individuation (Chickering 1969) and attachment theory (Bowlby 1973).

Separation/individuation theory (Chickering 1969, Chickering and Reisser 1993, Erikson 1968) views emotional adjustment to college as a factor in developing the individual autonomy needed in adulthood. According to Wartman (2009), separation/individuation is a developmental process that begins with separation from parents in order to achieve self-definition and individual autonomy. Students with a strong sense of self are more likely to make the transition to that of an independently functioning young adult. (Professionals who studied in higher education or student personnel programs likely are familiar with the developmental goals of separation and individuation but may be less familiar with other theories.)

Attachment theory was developed to explain the distress of infants and young children when they were separated from their parents (Bowlby 1998). Attachment is “any behavior that results in a person attaining or maintaining proximity to some other clearly identified individual who is conceived as better able to cope with the world” (1998). Attachment is even stronger when a child is tired, ill, or under stress. In these situations, the parent provides a strong sense of security to the child through parental comfort and caregiving. Although Bowlby developed attachment theory to explain the behavior of young children, he asserted that it was applicable throughout a person’s lifecycle, particularly in times of uncertainty and crisis. According to Wartman (2009), “When the framework of attachment is applied to the college context, traditional student affairs notions of separation-individuation are challenged...rather than needing a defined separation...students may actually benefit from regular parental contact and support instead.”

Separation and attachment theories may seem complete opposites, yet they are not mutually exclusive. According to Schwartz and Buboltz (2004), parental attachment provides a “secure base that affords the child comfort and security to explore and master the external environment with confidence.” They note that if students have “felt se-

curity,” they may “begin the psychological separation process and develop their own identity.” Several researchers (Armsden and Greenberg 1987; Hoffman 1984; Rice *et al.* 1995; Vivona 2000) have found that parental attachment and psychological separation are both associated with “healthy functioning and adjustment in college students” and may occur simultaneously (Schwartz and Buboltz 2004).

Schultheiss and Blustein (1994) studied the parental relationship and college adjustment of 139 students. They concluded that “the combination of psychological separation and parental attachment has been found to be the most adaptive configuration of family relationships for career development” (1994). However, they also noted that the connection between separation and attachment may be weaker in other domains, such as ego development.

Clearly, more research is necessary—particularly research which includes interviews with students and parents; defines positive and negative parental engagement; and asks students to evaluate the effectiveness of such engagements. Evaluations of parents and students will be more accurate as they include clearer language and unambiguous questions. Further, the research will be more robust if it relies on more than one theoretical lens.

IMPLICATIONS FOR PRACTICE

Some scoff at the idea of overprotective parents. Such critics say the behavior exists only in the minds of overburdened college staff. Or, if there are such things as overprotective parents, they come from the highest socioeconomic levels and don’t represent middle class students—and certainly not poor students. However, in addition to the present study, there are four solid scholarly reports of helicoptering at the college level (HERI 2007; Indiana University 2007; Toepfer 2008; and Wolf, Sax and Harper 2009). What can we—professors, academic and student services professionals, and admissions officers—learn from the research that will help us in our everyday lives?

First, we need to be more open to multiple explanations for helicoptering. Using both separation/individuation and attachment theories, it is possible to understand that positive parental support is correlated with the separation and individuation processes. Support, separation, and individuation can all be accomplished through positive parent engagement.

Table 1.
Types of Helicopter Parents, Concerns, and Strategies for Effective Interactions

Type of Parent	Concerns	Working with This Parent
Fairness	Concerned about treatment of student	Demonstrate via publications and processes that students are treated fairly. Provide feedback and complaint resolution methods for all parents and students.
Consumer Advocate	Value, services, and good for the price paid	Provide clear written policies on costs and charges. Be sure that staff members are consistent regarding rates and prices.
Safety Patrol	"Is my child safe?" May ask for documentation and paperwork. Wants the "latest and greatest" in safety systems and programs.	Be honest and realistic. Remind parents that colleges and universities comprise many buildings on many acres. Listen to concerns; consider upgrades and changes when and where appropriate. Provide symbols of campus safety.
Vicarious College Student	Participates with the student in the collegiate experience	Provide positive and constructive opportunities for parents to get involved. Remind parents of the need for students to have a unique and independent experience.
Toxic Parent	Nothing is satisfactory. The student is incompetent.	Involve counseling services if parent/student dynamics become dysfunctional.

Second, students who are the first in their families to attend college; who are from the poorest families; or who are students of color may have less parental interaction and support than their peers. Advocacy activities by TRIO and similar programs should be made available to these students to help level the playing field by providing additional support.

Third, senior administrators need to understand the different types of helicopter parent (see Table 1) and how to encourage "engaged parenting." Because consumer advocates and entitlement parents are the two most frequent types of helopats, offices throughout the university should be trained to address their concerns. Financial aid offices, in particular, will receive many more inquiries for additional funds as families struggle to afford college in the midst of the current economic downturn; administrators should respond appropriately and compassionately. Transparent policies and clear appeal mechanisms are very important.

Verify (through surveys or "secret shoppers") the responsiveness of key offices such as financial aid, registrar,

bursar, parking, academic advising, and residence life. If problems are identified, addressing them immediately could prevent a swarm of helicopter parents from descending on the president's office.

Fourth, parents are eager to receive information about what is happening in their students' lives. Newsletters, letters about specific services, and even prerecorded phone messages can be helpful in disseminating information to parents. If information is posted on a Web site or sent electronically, be sure to also make arrangements to communicate the information to parents having little or no computer access.

Fifth, present positive parent models. Just as admission offices have "diaries" of select first-year students online and in their literature, so too, can the diaries of the parents of first-year students be instructive. Entries could focus on separation issues, typical first-year crises, student services, and how to identify a true student emergency. This information could provide positive messages to parents about developing support for and cultivating independence in their "emerging adults."

Sixth, technology can work for us. Information about safety is important to parents as well as students. Web sites with emergency information, phone lines that provide prerecorded information about campus emergencies, and urgent information communicated via text/e-mail messages help parents and students ground their thoughts and behavior on fact rather than rumor. In addition, campus safety audit and written information for residential students is important in helping parents feel their students are safe in the care of the university.

Seventh, the depth and breadth of helicopter parenting are greater than we expected, both in the United States and abroad. Conversations with faculty members and parents in Latin America, Canada, Asia (Han and Dong 2009), and Europe confirm that the phenomenon is worldwide. Further, press reports from the United Kingdom (Hornby 2008; Kirwan-Taylor 2008; MacLeod 2008) communicate college and university personnel's concerns there. Reports of helicopter parenting and corporate recruiting (Tyler 2007) and of helicopter parenting and graduate/professional school applications (Blanck 2007) also exist. It is clear that many individuals share concerns about helicopter parents and could share information and strategies.

Eighth, consumer advocates may have valuable recommendations regarding how colleges could be more student- and parent-friendly. Housing, food services, parking, registration, and accounting are all areas that may need fresh ideas; consumers of those services (students and parents alike) may have suggestions for improvements.

Ninth, "transparency" is a campaign slogan that has turned into a public mandate. Written policies, procedures, and appeals for areas such as admission, transferring into "capped" programs, and the awarding of financial aid all provide the type of transparency that will reassure parents of the fairness of the university. (For a general discussion of transparency and the use of "school report cards" as a transparency measure, see Fung, Graham and Weil 2008.)

Finally, language is important when talking with helicopter parents. Most parents continue to think of their college students as their children; all of the emotional and visceral associations of protecting a child, caring for a child, and being responsible for a child inevitably attend. Continually using the term "student" rather than "child" can help the parent hear a boundary. Similarly, refer to faculty members as professors rather than as teachers. (Per-

ceptions of professors at a postsecondary institution differ significantly from those of teachers in the secondary environment.) Always refer to the institution as the college or university. Develop new terminology for "helicopter parents," a term that is loathed because it seems to assign blame to the parents. A more positive label for parent engagement will go a long way toward showing respect for an important constituency.

SUMMARY

This article on helicopter parenting includes a literature review and a description of helicopter parent types and demographics; explores social, cultural, psychological, and economic factors that influence helicoptering; discusses parenting theories; and provides tips for practitioners. While this represents only a small start, it is clear that helicoptering is a complex behavior that requires much more extensive examination. Practitioners can use this article as a starting point for discussions with senior administrators about dealing with parents. Lacking sufficient background on helicopter parents and their tactics, senior administrators may capitulate on enough complaints such that helicopter parents begin to drive institutional policy. And without a clear understanding of the importance of parent support, we may continue to be the recipients of parents' criticism and ire.

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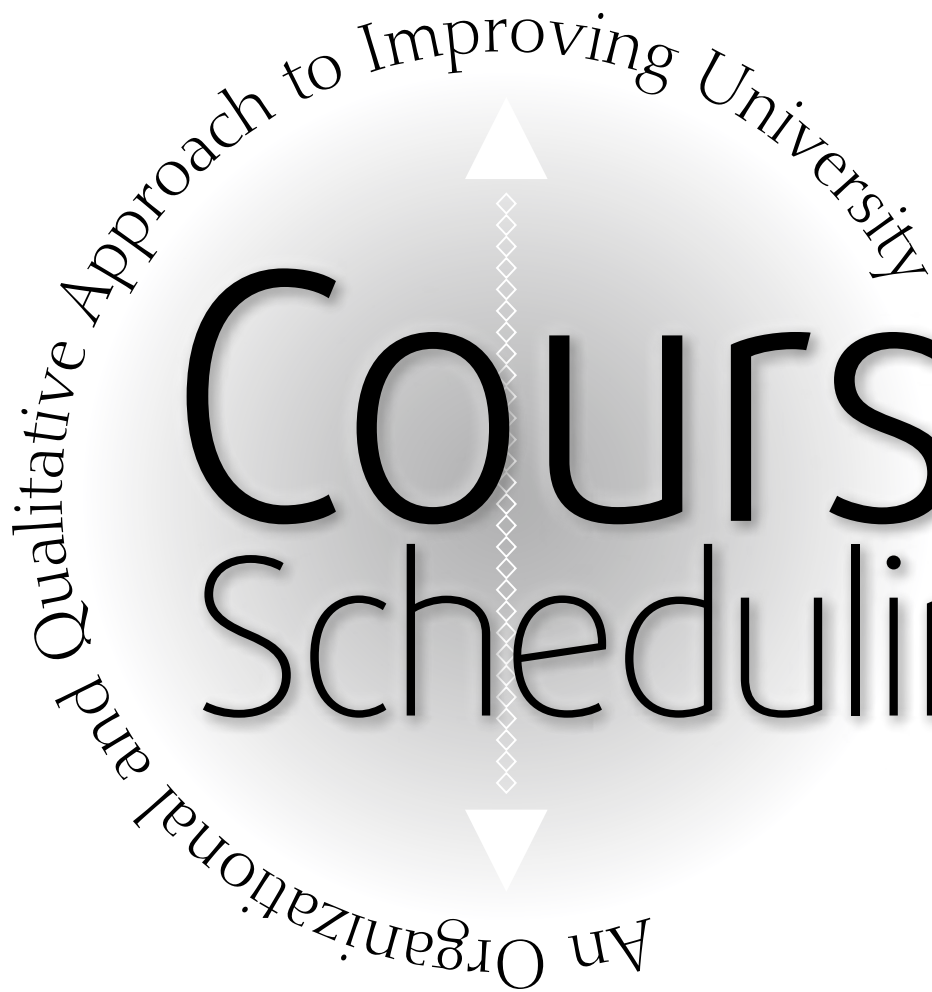
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Course Scheduling

Focusing on the current timetabling process at the University of Toronto Mississauga (UTM), I apply David Wesson's theoretical framework in order to understand (1) how increasing enrollment interacts with a decentralized timetabling process to limit the flexibility of course schedules and (2) the resultant impact on educational quality. I then apply Robert Birnbaum's leadership ideas to improve UTM's timetabling process: I propose the provision of strong centralized leadership in the timetabling process instead of the current central service support of a decentralized process.

University course scheduling, or timetabling, is a complex problem involving logistics, politics, funding, and pedagogy.

A typical definition of timetabling in the existing literature is “the determination of which courses are taught at what days and times, in which rooms, and taught by whom” (Thompson 2005). To this definition other scholars have added the dimension of who needs to enroll in the courses (i.e., the determination of how each course fulfills requirements for any given program of study). Similarly, the timetabling problem has a common definition among scholars: how to create a feasible timetable given a set of constraints or rules (i.e., any factor that limits when or where a course can be scheduled, such as instructor availability, conflicts with other required courses, and room availability).

Schedules typically are designed with quality in mind, as well. The definition of quality can vary and have multiple facets. For example, schedule quality could be defined by the degree to which the timetable supports student success; spreading students’ courses throughout the day with breaks between lectures could allow students more time to access student support services on campus. Breaks between lectures (instead of back-to-back classes) could enable students to begin each lecture refreshed, thereby positively affecting their engagement. Quality also could be defined according to students’ ability to take preferred courses with no time conflicts. An additional factor of

schedule quality is room utilization—specifically, how many seats in a given room are occupied when a room is being used, and how well used is the overall room inventory of an institution. A schedule that results in small courses being allocated to large rooms could be considered low quality because of space wastage.

At the University of Toronto Mississauga (UTM), timetabling is a highly decentralized process wherein all course sections, scheduling, and instructor allocations are completed at the department level; central coordination only occurs at the end of the process when rooms are allocated. While this arrangement has worked in the past, it has begun to prove problematic due to a significant enrollment increase over the past eight years—an increase without a comparable increase in classroom space. Every year more and more courses must be rescheduled on an individual basis because of limited room availability, and it has become increasingly difficult to reschedule courses without disrupting the timetable as a whole. Thus, course-by-course scheduling modifications degrade the overall integrity of the timetable.

The goal of this paper is twofold: to discern the specific nature and cause of the timetabling problems currently facing UTM and their impact on the quality of undergrad-

uate education; and to propose improvements that incorporate adjustments to process, organizational structure, and leadership. This paper will help fill the gap in non-mathematical and -computational approaches to addressing the university course timetabling problem.

I begin by reviewing the literature on university timetabling, examining a theoretical framework proposed by David Wesson, and describing the data collection methodology. In the second section I consider the nature and impact of the problem by analyzing UTM's timetabling and enrollment data and applying Wesson's theories. In the third section I describe Robert Birnbaum's leadership ideas and how his framework can be applied to propose a solution to UTM's timetabling problems. Finally, I propose areas for further research.

EXISTING APPROACHES TO THE TIMETABLING PROBLEM

The literature on course scheduling reveals a great deal of work in the areas of mathematics and computer science. This work has provided the groundwork for the development of automated course-scheduling software used by university timetabling officers. What these approaches do not address, however, are the nature and types of constraints that limit the flexibility of a course timetable. In fact, the ERIC (Educational Resources Information Center) database and Scholar's Portal contain almost no literature dealing with timetabling from an organizational or theoretical perspective.

One notable departure from the computational context of timetabling deals with the concept of scheduling courses based on student preference as a primary constraint. In "Using Information on Unconstrained Student Demand to Improve University Course Schedules", Thompson (2005) measures quality in course scheduling as "the extent to which students are able to take the courses for which they express preferences" (p.198). Instead of assuming a given array of constraints, Thompson introduces the concept of examining timetabling constraints themselves and their impact on the timetable. (This concept is applied later when I examine the limitations of the current timetabling arrangement at UTM and their impact on educational quality.)

DAVID WESSON'S INTERACTIVE CONSTRAINT MODEL

Another significant departure from the standard treatment of timetabling as a mathematical and computational

problem is David Wesson's work on timetabling as a theoretical construct, as described in his 1995 article "The Interactive Effects of Rules on Teaching Timetable Flexibility and Resource Utilization." Wesson's work provides a method of articulating and assessing timetable inflexibility due to the interaction of scheduling constraints.

Wesson's construct contains four main interacting dimensions: teachers, students, rooms, and time slots. The degree, number, and interaction of constraints related to these dimensions govern the feasibility of a timetable—essentially, the degree of flexibility within the timetable. Limited instructional space is an example of a factor that reduces schedule flexibility, as is narrowly defined instructor availability. Wesson's (1995) model of the interactive effects of timetabling constraints is illustrated by three propositions:

- (1) *Any constraint on a dimension of timetabling reduces flexibility to a greater degree than the constraint considered on its own;*
- (2) *Changes to a course's existing timetable will destabilize the rest of the timetable in inverse proportion to the degree of flexibility in the timetable;*
- (3) *There is a point at which the ratio of all constraining factors to one another will preclude the production of a feasible timetable* (p. 308).

The concepts described by these propositions are that no one timetabling constraint exists independently of another and any given constraint has a cascading effect on the rest of the timetable. Wesson (1995) theorizes the existence of a "Threshold of Rigidity:" the point at which no additional courses can be scheduled and no existing schedules can be modified without disruption to the rest of the timetable, regardless of whether the institution is operating at 100 percent capacity (*i.e.*, full room utilization) (p. 307).

The significance of Wesson's (1995) work is that it highlights the real-world effects of timetabling constraints. Program requirements, instructor schedules, and room utilization are no longer computational inputs for an algorithm. Rather, Wesson (1995) has created a unique frame of reference that builds an understanding of how each of the key timetabling dimensions works together to form a course timetable and how constraints to each of these dimensions can interact to degrade the quality of a timetable, even precluding its feasibility. While his ar-

ticle does not describe the application of his theory to a real-world timetabling problem, it provides a vocabulary and toolset which can be applied to identify weaknesses in an institution's timetabling process.

METHODOLOGY

The data about UTM course offerings and timetabling were provided by the university's Office of the Registrar. Course offering data pertain to academic sessions from fall 2001 through spring 2008. Data do not include summer session information as the summer session at UTM is secondary to the fall/winter session; typically, comparatively few courses are offered during the summer, and little coordination is needed as most students take no more than one course at a time.

The data comprise every unique meeting of every course offering and include the information shown in Table 1 for each of those meetings (example data provided).

Data regarding the timetabling process were obtained from the database of department scheduling requests in preparation for the 2008–09 academic year and were compared with the final schedule for that year. All data were analyzed using desktop spreadsheet software.

In addition to historical enrollment data, I relied heavily on my three years' experience as Campus Timetabling Officer (CTO) at UTM and on my preceding two years' experience providing back-up assistance and database programming support to the CTO. I worked closely with academic departments, their chairs, faculty, and administrators, as well as the registrar and assistant academic dean. These collaborations, combined with my involvement in timetabling during a period of significant enrollment increase, lend credence to my discussion of the timetabling situation at UTM.

Table 1

ICourse	FAH288H5
Year of study (i.e. 1st, 2nd, 3rd, or 4th year)	2
Session	20051
Discipline	FAH
Class average (GPA)	2.3
Activity type	LEC
Meeting section number	0101
Meeting day	Monday
Start time	10:00
End time	12:00
Duration	2.0
Building	NE
Room number	160
Room capacity	73
Room type	Tiered lecture
Final class enrollment	71
Enrollment cap	73

TIMETABLING AT THE UNIVERSITY OF TORONTO MISSISSAUGA

Two key factors have played a prominent role in the growing inflexibility of UTM's course timetable: a significant increase in enrollment without a corresponding increase in instructional space and the lack of centralization and flexibility in the timetabling process. The problematic nature of the decentralization of UTM's timetabling is highlighted by the three departments that recently embraced a more centralized method of timetabling.

A Decentralized Process

At UTM, all initial course timetabling happens at the department level; all departments build their timetables independently of one another, except in cases where a course is a requirement for an inter-department program. The foundation of the timetable every year is the previous year's timetable; decisions about which courses to offer, how many spaces and sections for each course, the allocation of faculty to course sections, and course sections to time slots is done by a designated faculty member with the assistance of a department administrative assistant. New courses are slotted in and existing courses are rescheduled as needed while taking into account program requirements and faculty schedules. Room availability is not considered in this part of the timetabling process.

Room allocation is conducted centrally in the Office of the Registrar by the Campus Timetabling Officer (CTO). Because of limited classroom space, the room allocation part of the timetabling process is characterized by a great deal of communication between the CTO and department administrators. This inefficient process results from the fact that the course timetable from each department is developed and then established in isolation from the timetable as a whole—and before it ever reaches the CTO. Effectively, each course activity can only be taught during

one preset timeslot—the ultimate form of scheduling rigidity. Any change that is required in order to fit courses into available classroom space requires revisiting this extremely rigid scheduling constraint—a process that requires the involvement of the CTO, the department administrator who acts as liaison, and the department chair (or designate) who has the authority to make scheduling decisions. This process results in significant disruptions to the timetable each time a course needs to be rescheduled. Because it is impractical to revisit schedules that already have been effectively finalized, the overall integrity and quality of the timetable is lessened with each subsequent change. (The impact of this rigidity is examined further in the next section.)

The exception to the decentralized process has been employed only recently by three of sixteen departments. The faculty members responsible for the timetable in these departments (one department chair and two undergraduate coordinators) work directly with the CTO beginning with the scheduling phase (*i.e.*, after course offerings have been decided upon and section caps have been finalized). This consultative process usually takes the form of one or two face-to-face meetings followed by e-mail and telephone correspondence. This arrangement is effective because the undergraduate coordinators typically have a better understanding than the administrative assistants who normally act as liaisons between the CTO and the department decision makers of each instructor's scheduling constraints. In addition to having much more influence on the instructors when new scheduling arrangements need to be made, they have authority to make decisions about course scheduling. The degree and nature of cooperation provide the CTO with much more insight into and information about the department's scheduling constraints; this proves useful throughout the entire process as well as for the future production of timetables. In the same way, the department academic authorities (*i.e.*, the undergraduate coordinator and/or chair) gain much more insight into and information about the broader scheduling issues extant on campus and tend to be much more flexible with their schedules in accommodating constraints and considerations such as room utilization and student success. The end result is a timetable that is more flexible. It maintains its overall integrity even while being adjusted in response to other departments' scheduling constraints.

The main distinction between the typical decentralized approach and the atypical coordinated approach is that with the latter, the CTO is involved in the timetabling process starting from the scheduling of courses in timeslots. This means that the course schedule for the three departments involved is built in the context of the timetable as a whole rather than being built in isolation from all other course schedules on campus. In effect, the process in this limited instance has been centralized.

Environmental Factors

The limitations inherent in the timetabling process are compounded by recent changes in environmental factors at UTM. Since September 2001, enrollment has increased by 62 percent while the number of classroom spaces has increased by only 32 percent (See Figure 1, on page 15). As a result, space utilization has increased from 24.4 hours per week in 2001–02 to 37.1 hours per week in 2007–08, above the standard of 30 to 34 hours per week set by the Council of Ontario Universities (COU) (Council of Ontario Universities 2007). Within the overall room inventory, the percentage of rooms operating above COU standards has increased dramatically, from approximately 10 percent to more than 60 percent (*see* Figure 2, on page 15). This space limitation has presented a scheduling constraint of growing rigidity that interacts with the other constraints to negatively affect the overall flexibility and quality of the schedule.

Overall classroom space available per full-time student has decreased; we are now well below the COU standard of 1.23 net assignable square metres (NASM) per full-time student (FTE). This figure is calculated using the COU Space Formula (COU 2007):

$$\text{NASM per FTE Student} = \frac{\text{Average University Classroom Station Size}}{(\text{Room Utilization Standard} \times \text{Station Utilization Standard})} \times \text{Weekly Student Contact Hours}$$

This standard makes several assumptions: average university classroom station size is assumed to be 1.7 meters per student; the room utilization standard is assumed to be between 30 and 34 hours per week; and the station utilization standard is assumed to be 74 percent to 65 percent of seats occupied when the room is used; and finally, the number of hours each student spends in lectures or tutorials per week is assumed to be approximately 16. Applying

this formula using UTM's actual room and station utilization values provides insight into the space situation: NASM per FTE student has decreased from 1.67 in 2001-02 to 1.03 in 2007-08 (see Figure 3).

The Result of Rigid Constraint Interaction

The impact of the environmental factors is that instructional space is extremely limited; this constraint interacts in turn with those that result from decentralization of the timetabling process. The overall result is that a significant number of activities cannot be scheduled as originally planned by a department. Because of the assumption that department schedules will be accommodated exactly as requested, instructor schedules tend to be finalized prior to production of the timetable, creating a rigid constraint that greatly reduces overall timetable flexibility. Second, because all courses for a given department are scheduled to be conflict free among programs and years of study, any change requested or required during production of the timetable affects other courses that may not have needed to be rescheduled. Without central coordination of the timetable from the very beginning of the scheduling process, department timetables inevitably conflict given the scarcity of classrooms.

In the 2008-09 course timetable, 43 percent of lecture sections and 49 percent of tutorial sections could not be scheduled as originally requested. Clearly, the integrity of the timetable suffers as it shifts away from the originally planned configuration; courses are rescheduled on an ad-hoc basis according to space constraints only and in the absence of overall department and program constraint information. The number of non-optimum schedules is lower among courses for which schedules are rigid due either to coordination of lectures, tutorials, and extensive lab times or to complete rigidity of instructor schedules. The number of non-optimum schedules increases significantly among courses for which there is less scheduling rigidity. Wesson's first proposition is demonstrated here: The cascade effect of increased constraint among a few courses affects a greater number of courses. It is important to note that the rigidity of constraints with respect to course coordination and instructor schedules is a presumed or perceived rigidity. (I address this distinction in the next section as it has ramifications for the development of a new timetabling process at UTM.)

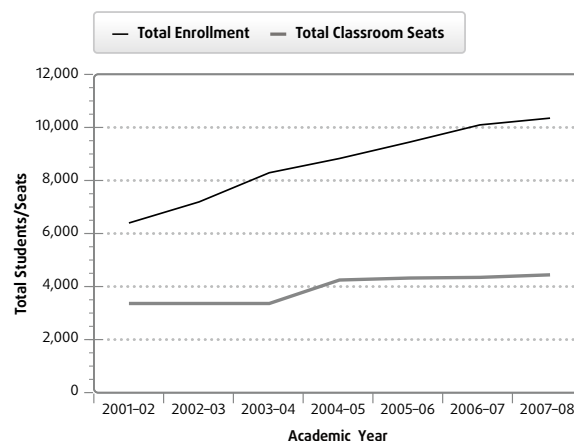


FIGURE 1. Enrollment vs. Classroom Space

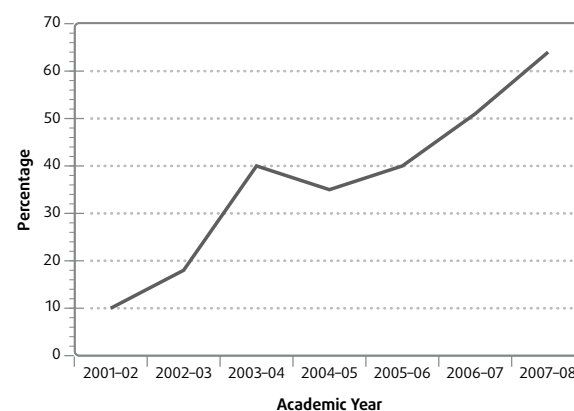


FIGURE 2. Percent of Rooms Operating Above COU Standards

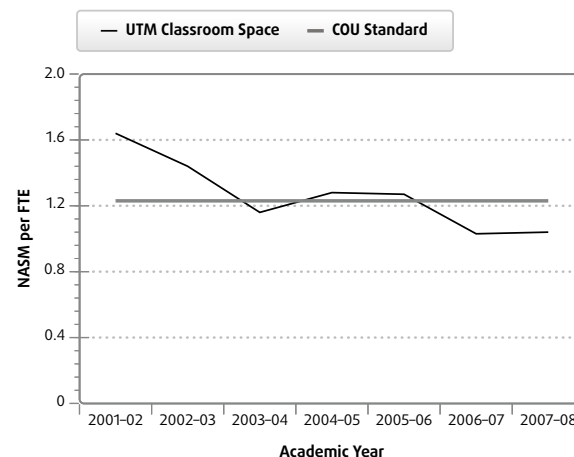


FIGURE 3. UTM Classroom Space vs. COU Standard

Duration and number of meetings per week are additional constraints that illustrate Wesson's first proposition, given that all meetings for individual course sections must be scheduled in the same room. While 56.4 percent of all activities meet for one hour, one-hour activities represent 62.9 percent of the courses that were rescheduled. In contrast, two-hour activities make up 34.7 percent of all activities yet represent only 29.6 percent of those rescheduled; three-hour courses hold a similar differential at 8.8 percent of total and 7.5 percent of rescheduled activities. Similarly, the variance among courses that meet once, twice, or three times per week demonstrates that an inordinate percentage of courses meeting once per week are displaced: While such courses make up 88.7 percent of all activities, they represent 93 percent of rescheduled activities. In contrast, the 3.3 percent of activities that meet three times per week make up only 0.7 percent of rescheduled activities; activities meeting twice per week account for 8 percent of the total, with 6 percent of those being rescheduled. Thus, the smaller number of courses with less scheduling flexibility displaces a greater number of courses with more flexibility.

Wesson's second proposition comes to bear after the preliminary timetable has been published. There are always numerous requests for change in an already very rigid timetable. In the majority of cases, change requests during the preliminary phase of timetabling are disruptive and destabilize the overall timetable: For example, a change requested for one course will have an impact on at least two others (often more, especially when the request is to reschedule a mid- to large-sized year-long course that meets for more than one hour per week). During production of the 2008–09 timetable, a total of 249 course sections were added and 55 were removed from the schedule *after* the preliminary timetable was compiled.

According to Wesson's definition, UTM has crossed the Threshold of Rigidity: No additional courses can be scheduled and no existing schedules can be modified without disrupting the rest of the timetable—notwithstanding the fact that UTM is not operating at 100 percent, or 57 hours per week average room utilization (COU 2007, p. 149).

The Consequences of Crossing the Threshold

The connection of resource limitations (due to increased enrollment) and process problems (due to inefficient organizational structure and decentralization) to course

timetabling problems is clear. But what is the impact of the problem? Specifically, how does timetabling inflexibility affect the quality of the timetable and of undergraduate education at UTM?

Class size. The relation of timetabling to quality in higher education has not been researched extensively; literature on this topic tends to focus on the issue of class size. Conventional wisdom holds that large class sizes have a negative impact on educational quality, yet much of the research conducted in this area does not support that conclusion. Nevertheless, examination of UTM class averages since 2001 suggests that class size does have an impact on student success, suggesting in turn, an impact on course quality. It thus follows that a better-quality course is likely to result in a higher class average. Among all levels of study—first-, second-, third-, and fourth-year—class averages decrease as class size increases. (See Figure 4, on page 17.)

The apparent link between class average and class size at UTM is compounded by enrollment increases. The numbers of all class size groups at UTM have increased. However, between 2001 and 2008, of the total number of offerings, the percentage of small classes decreased by 6.05 percent, and the percentage of extra-large classes increased by 5.57 percent. (See Figure 5.) The almost one-point decrease in class average between small and extra large classes suggests that the increasing rigidity of the timetable is having a negative impact on academic quality.

Some instructors at UTM share the perception that quality decreases as class size increases. Many instructors of first-year courses have expressed a strong negative sentiment regarding increases in their class sizes. They say that large class sizes have a negative impact on the quality of education as they limit their ability to interact with students and to teach effectively.

Class timing. Although the data suggest little relationship between when a class is held and class average, the time of day classes meet could affect quality. For example, while the percentage of lectures offered during the day (before 5 pm) has increased by one point, this increase has been at the expense of tutorial meetings (the number of tutorials meeting at night has increased by 8.4 percent). Because lectures are still offered primarily during the day (92%), quality could be negatively affected by students' having to continue their coursework into the evening

rather than being able to attend tutorials between lectures scheduled throughout the day.

The data suggest another negative impact on quality: The number of hours each activity meets per week has been negatively affected by the current timetabling process and enrollment growth. Lectures met an average of 2.16 hours per week in 2007–08, compared with 2.51 hours per week in 2001–02. Assuming each full-time student takes an average of 4.5 courses per term, the number of contact hours in lectures and tutorials per student has decreased from 16.8 to 14.9 hours per week.

Student preference/student demand. Whether the course timetable allows students to take the courses they want is integral to student satisfaction and the quality of their educational experience. It also raises the issue of access—that is, whether the timetable provides access to courses that students want to take. Gary M. Thompson (2005) of Cornell University provides an example of the implementation and effect of student demand timetabling. Thompson (2005) measures quality in course scheduling as “the extent to which students are able to take the courses for which they express preferences” (198). By conducting an experiment that tested a timetable based on student demand only versus one that relied on other constraints such as program requirements, he found a 22 percent increase in the number of students who were able to enroll in at least one additional preferred course (Thompson 2005). Thus, student demand-based timetabling had a positive effect on the quality of the student experience. (While Thompson’s [2005] study did not account for student motivation in course choice, student satisfaction nevertheless is an important factor in education quality, and student demand-based timetabling can have a positive impact on quality.)

An important part of Thompson’s (2005) discussion relates to customer service—to wit, relying on information about past service to make decisions about future service will perpetuate bad service. At UTM, reliance on the previous year’s timetable is potentially limiting the service the timetable could provide—specifically, access to preferred courses.

While no data are available for ascertaining whether students are able to enroll in preferred courses at UTM (although they seem able to enroll in the courses necessary to graduate), the current timetabling process makes

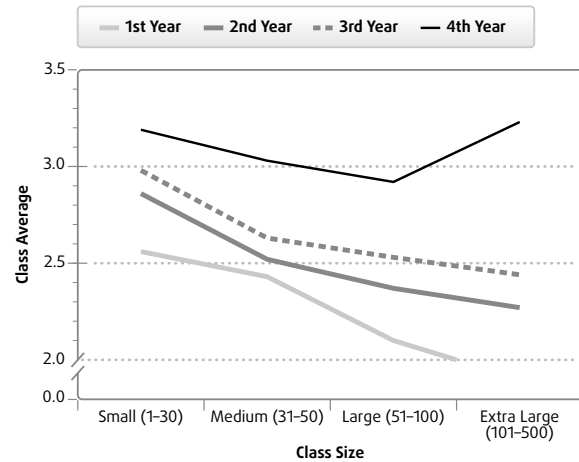


FIGURE 4. *Class Average vs. Class Size*

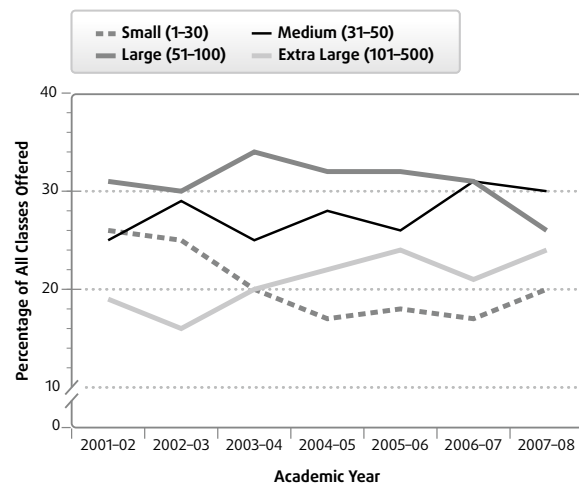


FIGURE 5. *Class Size Groupings by Academic Year*

absolutely no provision for student demand. Given the constraints already mentioned, it is likely that students are not able to enroll routinely in preferred courses and that it is not possible to incorporate student demand into the current process given its inflexibility and decentralization.

The timetabling process at UTM is characterized by an information disconnect among departments and the CTO that results in disruption of much of the overall course schedule. The potential for non-optimum timetables is increased by the restrictions to the process, which in turn have a negative impact on the quality of UTM students’ education experience.

TOWARD A CENTRALIZED PROCESS

Because UTM's timetabling problem is rooted in communication disconnects and process inefficiencies caused by decentralization, the solution to the problem must move the timetabling process to a more centralized model. As described previously, there has already been some measure of success in implementing a more centralized coordination of timetabling on a small scale. Success in this case is characterized by a more efficient and effective timetabling process; less time was spent on the process, and the number of changes to the timetable after it was produced was minimal. Where there were changes needed in order to accommodate the more rigid schedules of other departments, it was much easier to maintain the integrity of the schedule because the CTO had more constraint information and more discretion to make adjustments—most important, each adjustment was made in relation to the overall integrity of the schedule, rather than in the context of only one or two constraints. The key components to this success were that the main point of contact at the department level was a designated faculty member with the authority to make scheduling decisions; that the department designate provided complete scheduling constraint information to the CTO; and that the CTO was granted some discretion to make adjustments to the timetable.

The Advantages of Centralization

Centralization of the timetabling process will provide several improvements over the current model. First, it will enable a wider view and assessment of all scheduling constraints prior to the production of the timetable, thereby allowing management of their interactions, which previously had not been possible. A key example of this is the aforementioned problem of instructor scheduling constraints: Under the decentralized process, instructor schedules are set prior to room allocation. It is assumed that instructors' schedules are inflexible (it would be onerous for faculty members to revise their schedules every time a course schedule adjustment was made). However, if real faculty scheduling constraints were known prior to central scheduling, there would be no need to consult with each faculty member during that process. Rather, faculty schedules would be set after rooms were allocated. In this way, centralization reduces the rigidity of instructor scheduling constraints, as well as the correlating negative impact on the overall schedule.

A centralized timetabling process also would allow incorporation of student demand data into the process because far more information about constraints would be available during course scheduling; potential course combinations could be identified; previous enrollment data and student demand could be used to better plan course offerings. In addition, class size could be positively affected: planned station utilization (*i.e.*, calculated from maximum enrollment capacities) has been consistently higher than actual station utilization (*i.e.*, calculated from actual enrollments) during every school year surveyed; more significant, this differential has been consistently higher among classrooms seating fewer than 100 students. With better data for planning course offerings and sectioning, we may be able to more accurately predict the number of students who will enroll in particular classes, thereby releasing more classroom space for additional smaller courses.

While room utilization is already above the COU standard, utilization is slightly higher in rooms that seat 100 or more students. Increasingly, course caps in existing sections need to be raised because there are not enough smaller rooms available for additional course sections. Centralization is likely to increase room utilization, thus freeing up more space for additional course sections (assuming funding for additional instructors is available).

Consequences for Leadership

Given the institutional culture of research-intensive universities such as UTM, wherein faculty members exert significant influence, it sometimes is difficult to effect change—especially that which could be perceived as wresting control and discretion from faculty. Nevertheless, centralization of timetabling at UTM is possible if certain changes to leadership and organization of the scheduling process are implemented. Robert Birnbaum's (1992) work on leadership in higher education can be applied to ascertain and describe these changes.

In *How Academic Leadership Works*, Birnbaum (1992) examines the nature of effective leadership in higher education. Although he uses the college presidency as the context for his work, his ideas can be applied to reorganization of the timetabling process. Birnbaum (1992) identifies faculty support as a key factor in the success of leadership in higher education, particularly in times

of change. He describes four cognitive frames for considering leadership: structural, collegial, political, and symbolic. The following discussion examines the impact of leadership on timetabling at UTM and considers how some structural reorganization could aid the move to a centralized timetabling process.

Structural and symbolic frames. At present, course timetabling falls under the sole jurisdiction of the Office of the Registrar (OR). As such, it is viewed as a service provided to students and faculty in much the same way the Office of the Registrar provides other services—as, for example, academic advising, maintenance of enrollment data, financial aid, examinations coordination, etc. Because timetabling happens largely at the department level, the central timetabling service provided by the OR is perceived simply as the allocation of rooms. Yet the continued involvement of the OR is critical: Not only does the office manage the allocation of instructional space, but it also plays a significant role in the management of enrollment during course registration periods. Nevertheless, as demonstrated above, the current timetabling process needs to do more by way of coordinating the overall schedule. In essence, UTM requires the provision of central *leadership* in the timetabling process, not simply the central provision of a service.

In order to successfully broaden the mandate of central timetabling to include more leadership, involvement, and influence in department planning, it is critical to gain the acceptance of the faculty. Then the timetabling process would benefit from being a shared jurisdiction between the Office of the Registrar and the Office of the Academic Dean. Advantages to such an organizational arrangement are that the Academic Dean would provide a formal reporting structure, credibility, and accountability that would have a direct link to the academic side of the campus—and, thus, to the faculty. The established atypical centralized timetabling style illustrates this advantage: In the three departments that already employ this style, the faculty timetabling designates act as the academic authority. As such, they are able to influence fellow faculty members with respect to scheduling; by working closely with the CTO, they impart both credibility and authority with regard to centralized timetabling decisions. The additional advantage to this arrangement is symbolic: The formal association of central academic authority with the timetabling process assures faculty that their needs and

general academic concerns are given priority in the construction of the timetable.

The Office of the Registrar's continued involvement in the process will be enhanced through assessment and accommodation of student demand as well as more accurate planning with respect to course sectioning. A centralized process would allow the timetable to better accommodate student needs.

Political and collegial frames. I group the political and collegial frames because both depend on working with people. The centralized process will require an unprecedented amount of cooperation with faculty and department chairs to ensure that all scheduling needs and requirements are met. Central timetabling authorities must maintain strong, collegial working relationships with all departments and faculty. Faculty concerns and needs must be heeded and taken seriously in order to ensure that the final schedule is credible and acceptable.


Politically, it is important to establish some kind of formal governing body to oversee academic timetabling so as to maintain accountability to and credibility before faculty. This body would review faculty feedback about the process and would resolve the timetabling disputes that arise when space is at a premium and when the “inventory” includes a variety of different types and qualities of rooms.

CONCLUSION

Having applied Wesson's framework to UTM, it is clear that the current decentralized timetabling process has created a set of constraints so rigid that their interactions have pushed us to—if not beyond—the Threshold of Rigidity. The critical factor of increasing enrollment will not subside; change is imperative. The centralized process proposed in this article would enable UTM to cope with the current enrollment and instructional space differential by coordinating the timetabling process from the outset. In short, this means accounting for physical constraints *throughout the process* rather than only at the end. The new process will open the door for other improvements to timetabling, such as the inclusion of student demand information into the process.

A centralized process will require those responsible for timetabling to shift from a service-oriented approach to a leadership approach that has the academic focus necessary to gain faculty acceptance. Reframing the timetabling

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problem at UTM as a leadership opportunity rather than as a mere service problem will enable current and future challenges to be met.

FURTHER RESEARCH

Evaluating university course timetabling from an organizational, leadership, or theoretical perspective can teach us much about ways to improve our processes and to cope with limited resources. While I suspect this framework is particularly useful in the context of research-intensive universities, it also is likely to be useful for other types of postsecondary institutions, such as community colleges and polytechnic universities. Future research might examine the impact of institution type and size on the timetabling process.

The type of instructor has some impact on timetabling constraints. That is, whether a course is taught by a tenured professor, an adjunct instructor, a long-term teaching appointment instructor, or a graduate student seems to have an impact on the schedule. Study of the types of instructors that teach university courses may reveal trends in scheduling restrictions.

While the solution proposed in the foregoing article focuses on managing faculty expectations and requirements, it is equally important—if not more so—to focus on the needs of students with respect to course timetabling and in the context of process improvements and re-engineering. Of particular interest would be a continuation of Gary Thompson's (1992) study of student-demand timeta-

bling, with a focus on students' motivations when choosing courses and also on what student characteristics (*i.e.*, whether the student lives on or off campus, is enrolled full or part time) may affect their course choices and scheduling preferences. This may provide valuable insight into the effect of timetabling on education quality and access.

Finally, a broad study of timetabling at many universities may shed some light on the different styles and processes, different levels of centralization, and the local and overall impact of organizational structure and leadership on timetabling processes.

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ERP

Enterprise Resource

STUDENT ADMINISTRATION

An investigation of the post-implementation experiences of six higher education institutions following initial implementation of a Student Administration ERP system and how these institutions used the post-implementation phase to maximize benefits of the ERP system.

POST-IMPLEMENTATION SUCCESS FACTORS *for* Resource Planning SYSTEMS IN HIGHER EDUCATION INSTITUTIONS

Enterprise Resource Planning (ERP) systems can represent one of the largest investments of human and financial resources by a higher education institution (Dewey and DeBlois 2006; May/June 2006). They also bring a significant process reengineering aspect to the institution and the associated implementation project through the integration of compiled industry best practices into the software. Often, these embedded best practices require the institution to alter its operations so as to match those delivered in the system (Markus and Tanis 2000; Pollock, Williams and Procter 2003; Wagner, Scott and Galliers 2006). According to Dewey and DeBlois (2006), “Projects of this scope might

last three years or more and demand large and sustainable investment and commitment by institutional and IT leadership, both throughout and after implementation.”

It is becoming more critical for those administrators and chief information officers who must justify the significant on-going expense and operational impacts to realize the benefits of an ERP system and to be able to quantify those benefits (Hawkins and Barone 2003). The benefits are not usually realized at “go live,” which is the point of the project at which the ERP system becomes the production database for the operation of the organization and users enter data in the system for normal operations. It may take months or even years for an organization to fully assimilate all of

Table 1.*Survey Institution Headcount Summary
(Frequency & Percentage)*

Fall 2007 Headcount	Frequency	Percent
< 2,000	4	3
2,000-7,900	69	46
8,000-14,999	36	24
15,000+	40	27
Total	149	100

Table 2.*ERP Status of Survey Institutions
(Frequency & Percentage)*

Institutional ERP Status	Frequency	Percent
Have completed implementation	86	58
Have an implementation in process	33	22
In Request For Proposal (RFP) stage of implementation	4	3
Considering an implementation	10	7
No plans for an implementation	13	9
No response	3	2

the process changes enabled by the new system (Hawking, Stein and Foster 2004; Markus and Tanis 2000).

The purposes of this research were (1) to explore the ERP student administration system post-implementation experiences of six case-study institutions and (2) to present their successes and challenges so that higher education administrators and leaders can use information from these experiences to determine what actions they may need to take at their own institutions for a successful post-implementation experience. This study adds to the small body of research focused on the higher education post-implementation ERP experience and contributes to the growing area of ERP post-implementation research. In addition, the research offers useful insights into the continuing impact

of an ERP implementation project on the higher education institutional environment following “go live.”

METHODOLOGY

To assess the current status of ERP implementations at public and private higher education institutions nationwide, an initial online survey was distributed to the chief information officers (CIOs) or primary technology administrators at just less than 600 public and private U.S. institutions of higher education.

Quantitative Results

The CIOs or chief technology administrators of 596 colleges and universities were invited to participate in the online survey on institutional ERP characteristics. One hundred forty-nine validated responses (25 percent response rate) provided the data set for the summary statistics and follow-on analysis.

Table 1 provides a summary of the institutions surveyed by unduplicated student headcount for fall 2007. Small institutions (fewer than 8,000 headcount) represented 49 percent ($n=73$) of the responses while medium (headcount between 8,000 and 14,999) and large institutions (headcount of 15,000 or more) combined represented 51 percent ($n=76$) of institutions surveyed. Considered separately, the medium-sized institutions had a 24 percent ($n=36$) response rate and the large schools had a 27 percent ($n=40$) response rate. These rates could be an indicator of small institutions’ (response rate 49 percent [$n=73$]) greater interest in or activity with ERP systems.

More than one-half (58 percent; $n=86$) of the responding institutions indicated completion of an initial ERP implementation while 33 (22%) currently had an implementation in progress. (See Table 2.) Survey responses indicated further that 58 initial implementations of student, finance, or human resource ERP modules were planned during the next three years, with the greatest number ($n=23$; 40%) planned for the student module. (See Table 3, on page 25.)

Selection of Case Study Institutions

The six case study institutions were chosen from among the online survey respondents whose institutional ERP characteristics met the following selection criteria: (a) completion of an initial ERP student administration module

Table 3.
ERP System Module Implementation Status (Frequency & Percentage)

ERP System Module	Plan initial implementation in the next 3 years		Have completed initial implementation		Plan to upgrade module in the next 3 years		No plans to implement this model		No response	
	n	%	n	%	n	%	n	%	n	%
Student	23	40	69	26	40	28	0		29	17
Financial	15	26	83	30	40	28	0		26	15
Human Resources	20	34	75	28	41	29	0		27	16
Other	0		43	16	22	15	4	100	90	52

Note. Respondents were permitted to select more than one implementation status per ERP system module

implementation and (b) completion of the implementation within the previous four years. The primary selection criterion (completion of an initial implementation of an ERP system student administration module) was chosen because this module is unique to higher education and limited research exists specific to student administration ERPs. Therefore, the case study research focused specifically on the post-implementation experiences of the student administration ERP module at the six selected institutions.

The second criterion (completion of the implementation within the previous four years) was important for identifying institutions that had sufficient time in the post-implementation environment to develop relevant experiences and responses to the initial implementation before transitioning focus and efforts to major enhancements and upgrades.

Institutional size was incorporated as an additional selection determinant. Three size levels based upon the fall 2007 Integrated Postsecondary Education Data System (IPEDS) unduplicated student headcount were used: small (2,000–7,999), medium (8,000–14,999) and large (15,000+) institutions. Final selection of the six case study institutions was accomplished through purposive sampling to select cases that would provide the widest range of post-implementation experiences.

Table 4 provides a summary of the characteristics of each case study institution, including size, type, and year in which the initial student ERP implementation was completed.

- *Case Study A:* Case study A (CS-A) is a large, public flagship institution of a state university system. Of the six case studies, CS-A is one of the two that completed an ERP student administration implementation (*see* Table 4) most recently. At the time of the on-site visit, CS-A had been operational in the student module for just over a year.
- *Case Study B:* Case study B (CS-B) is a medium-sized, private university. The CS-B student ERP implementation project was part of a larger ERP implementation which included finance and HR modules.

Table 4.
Case Study Institution Size, Type, & Year ERP Implementation Completed

Case Study Institution	Institution Size Category	Institution Type	Year Completed Initial Student ERP Implementation
A	Large	Public	2007
B	Medium	Private	2006
C	Medium	Private	2005
D	Small	Public	2006
E	Small	Private	2004
F	Large	Public	2007

Table 5.

Number of Interview Participants by Institution & Job Area

Participant Job Areas	Case Study Institutions					
	A	B	C	D	E	F
Project Management	1		1	1		2
Student Module (Functional)						
Registrar Admin	1	1	3	1	1	6
Admissions Admin		1	2	1		2
Financial Aid Admin	1		2	1	1	1
Student Accounts Admin		1	2	1		1
Department End-users		2	10			5
Academic Affairs/Faculty	1	1	2			8
Training				1		1
Security Administration						2
Student Module (Technical)						
CIO/CTO		1			1	
OIT* Project Management	1	2		1	1	1
OIT* Management	3		3	2		1
OIT* Technical	3	2	4	4	2	3
Ancillary Departments						
Finance & Accounting		1				
Human Resources		1				
Institutional Research	1	1				
Total Participants:	12	14	29	13	6	33
Institution Size	Large	Medium	Medium	Small	Small	Large

* Office of Information Technology

- **Case Study C:** Case study C (CS-C) is a medium-sized, private university. At the time of the on-site visit, CS-C had been fully live in the student ERP system for three years.
- **Case Study D:** Case study D (CS-D) is a small, public university that is part of a Board of Regents state college and university system. The student ERP system was the focus of CS-D's implementation project. CS-D did not convert its Finance and HR systems, which were running on an application by a different vendor.
- **Case Study E:** Case study E (CS-E) is a small, private liberal arts university. CS-E has been in the ERP post-implementation environment longer than any other case study institution in this research project. At the time of the on-site visit, just more four years had passed since implementation; the institution was in the beginning

phases of its project plan for a major version upgrade of its ERP system.

- **Case Study F:** Case study F (CS-F) is a large, public land-grant university. CS-F's student ERP implementation project was part of a larger ERP implementation that also included HR and finance modules.

Qualitative Results

On-site visits to the six case study institutions were conducted in June and July 2008. (See Table 5 for the number of interview participants by job area and case study institution.)

Interview participants were asked to respond to the following questions:

- Describe the institution's ERP student administration implementation experience from your perspective.

- Describe your experience with the ERP student administration implementation.
- Describe the ERP student administration “go live” experience from your perspective.
- What has been the institution’s post-implementation experience from “go live” to present from your perspective?
- What has been your post-implementation experience from “go live” to present?
- How would you describe the current status of the ERP student administration module?

DISCUSSION

Initial analysis revealed that the post-implementation experience could not be considered in a vacuum, separate from the project decisions and activities that occurred during pre-implementation and “go live.” As one of the functional administrators said, “The post-implementation experience relates directly—correlates directly—to the pre-implementation experience.”

Findings support the conclusions of Okunoye, Frolick and Crable (2006), based upon case study research of ERP selection and implementation in higher education institutions and that of Pollock *et al.* (2003) based upon studies of higher education ERP implementations in the United Kingdom: Higher education has areas of differentiation that do not fit neatly into delivered ERP system processes traditionally designed for commercial business environments. The student records and admissions components of the student ERP module consistently experienced more difficulties in post-implementation and longer periods to return to stable operations following “go live” than student accounts or student financial aid. The number of customizations and enhancements completed or under consideration by the case study institutions indicates that there are many areas in which current student ERP systems do not fit the needs of higher education institutions. These findings also challenge ERP vendor marketing claims that student ERP systems are a compilation of industry best practices. The research findings are supported further by Nielsen’s study (2005) on critical success factors (CSFs) specific to higher education: The study found that while there is much commonality in ERP system experiences across industry sectors—particularly in the implementation phase—there also are unique differences in the higher education environment.

The overall post-implementation experiences of the six case study institutions were similar, regardless of institutional size. While each individual institution emphasized different aspects of the project implementation that had an impact on its post-implementation, these influences yielded post-implementation characteristics that were shared to varying degrees by all case study institutions. Shared post-implementation experiences included:

- the continuance of some form of the cross-functional ERP project governance teams initially created for the implementation project;
- the use of customizations, bolt-ons, or third-party software to enhance functionality or to fill gaps in the delivered ERP software;
- the need to increase user understanding of delivered business processes within the student ERP system; and
- the challenge to balance technical resources and to coordinate among functional areas during phased implementation of the several components of the student ERP, particularly when one or more components would be in post-implementation while other components would still be preparing to go live.

Although not reported specifically by all institutions, many post-implementation experiences were shared by several of them. Following is a summary of the post-implementation experiences detailed by two or more of the case study institutions:

- Changes in functional skill sets requiring staff to become more analytical and more technically adept were described by all but one case study.
- Staff turnover in both functional and technical areas was described by five of the six case studies as neither extraordinary nor unexpected and as resulting primarily from retirements, either at the beginning of the project or immediately following “go live.” Only one unit reported 100 percent turnover during the course of the project and into post-implementation.
- User training in post-implementation varied, but all approaches could be classified in either of two diverging directions: (1) the need for formal training of the system users had tapered off, with responsibility for ongoing training delegated to individuals or department efforts; or (2) the need to develop or increase ongoing formal

training to support and improve user understanding of the student ERP system was identified. The institution's approach to user training during the project phase and prior to "go live" appeared to have a direct effect on post-implementation training needs. Generally, those institutions that invested in a formal plan for user training during the project phase followed direction (1) in post-implementation; those that did not have a focused training approach during the project phase tended to head in direction (2) in their post-implementation experience.

- Functional or technical consultant support was retained by three institutions for up to two years following "go live," depending upon the needs of the institution.
- Functional users at five case study institutions experienced considerable increases in time required to complete data entry tasks.
- Duplicate records and other major conversion data issues resulted in manual data validation processes being put in place for operational transactions (*e.g.*, manual

review of each transcript prior to its release) at three of the case study institutions.

- Two case study institutions described internal work-arounds developed by users to compensate for delivered functionality that had not yet been implemented.
- Having all data located in one system changed the level of interactions between the functional and technical areas, as well as among the functional departments, resulting in more open, collaborative communication.
- System performance problems such as instability, slow downs, and dropped sessions were experienced in post-implementation by five case study institutions. (The problems' severity and longevity varied.)
- As a result either of political pressures or system limitations, individual schools or departments within two case study institutions were allowed to maintain their own student systems and to interface the data into the student ERP; this resulted in additional problems and an increased workload for the IT areas.

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- All but one case study institution specifically identified the lack of reporting functionality within the delivered ERP as a problem that required focused solutions immediately following “go live.”

Brehm, Heinzl, and Markus (2001) identified how institutions respond to gaps between the delivered ERP system and functional business processes: change internal business processes to conform with those required by the ERP; accept the gaps and develop workarounds to accomplish the needed business process; and apply customizations or enhancements to the delivered ERP in combination with changed business processes so as to provide optimal solutions. Although all but one of the case study institutions characterized their implementations as “vanilla,” all three of Brehm *et al.*’s (2001) approaches to gap management were evident. Respondents from only one of the case study institutions using the “vanilla” approach reported making source code modifications (six) in post-implementation in order to meet state and federal regulatory agency reporting requirements. Respondents from two institutions described being surprised by the volume of user requests for customizations that were received immediately following “go-live” in post-implementation. Bolt-on functionality was used heavily among the institutions in order to meet customization needs. Specific customizations as detailed by the institutions are listed below (note: the number of case study institutions implementing each customization is indicated in parentheses):

- state, federal, or other regulatory reporting requirements (3)
- custom applications—including photos—for graduate admissions and professional schools (2)
- online functionality for admissions, advisors, and student financial aid (4)
- masking Social Security Numbers (1)
- data entry pages (2).

Customizations to improve user data entry varied widely among the institutions, ranging from implementing workflow to reduce the number of required keystrokes to not adopting any customizations that would reduce functional process steps.

All case study institutions used third-party software for operational needs not met by the delivered student ERP

application. The areas of third-party application functionality are listed below in descending order by the number of case study institutions (indicated in parentheses) utilizing them:

- reporting (6)
- housing (5)
- cashiering (3)
- admissions applications (2)
- CRM (2)
- data transfer programs for loading admissions data (2)
- degree audit (2)
- health services (2)
- address validation and corrections (1)
- course management (1)
- credit card servicing (1)
- forms generator for transcripts (1)
- international education (1)
- international student administration (1)
- letter generation (1)
- online class schedule search (1)
- online payments (1)

Although third-party applications were widely used by the case study institutions, they were not necessarily an easy solution. Technical managers at two institutions commented specifically on the amount and complexity of the work associated with implementing some third-party applications, even when the applications were promoted as being certified by the ERP vendor for compatibility with the student system.

Respondents from two case study institutions explained that efforts to use specific delivered functionalities during the first year of post-implementation were abandoned in favor of third-party applications. These changes were made in response both to limitations in the student ERP and to the institution’s inability to alter its business needs to fit the delivered process. Functionalities included the admissions application and the degree audit. Half of the case study schools continued to run their legacy systems in parallel with the student ERP for up to a year following “go live” either so that data conversions could be completed or so that functionality not critical for “go live” could be converted to the student ERP.

Two case study institutions used the student ERP system implementation to incorporate changes to existing

internal policies and organizational structures for post-implementation. Both institutions re-evaluated data security access and implemented policy changes to tighten faculty and staff access to student data. In addition, one institution reorganized certain department structures in order to better accommodate the changes brought by the student system.

Respondents from three institutions detailed future planned customizations or enhancements with third-party software. One institution, in its second year of post-implementation, indicated that having become stable in the ERP environment, it was evaluating other products to replace parts of the delivered functionality. The other case study institutions indicated that many of the additional planned acquisitions were peripheral applications *not* designed to replace student ERP functionality but rather to interface with the system so as to enhance overall operations. Expectations were that these additions would increase the usability of the student system.

Although all six case study institutions reported fairly robust post-implementation activities in establishing continuity or adding enhancements, half commented specifically that the pace of their implementation did not allow for individuals to learn the system satisfactorily before “go live.” In post-implementation, they did not have the opportunity to assess the new student ERP functionality for effectiveness or to systematically evaluate its impact. Many felt that they needed the first year of post-implementation to learn the new system—before moving on to something else and before making decisions about necessary customizations or business process changes.

CONCLUSIONS

- The ability to maximize ERP benefits can vary widely among different components and departments within a single institution. Administrators and managers should consider the implications at each individual component level so as to better evaluate the post-implementation impacts and benefits for each institutional unit.
- An institution’s size does not have a material influence on either the project outcome or the post-implementation experience. There were no consequential differences in post-implementation experiences or ability to maximize ERP benefits according to institutional size.

- Formal business process reviews and the length of the implementation project did not have a material impact on the post-implementation experiences of the case study institutions. Generally, institutions’ experiences were consistent regardless of whether business process reviews had been conducted prior to “go live” and regardless of the amount of time allocated to the project. Some component areas were able to transition more readily into enhancements and changes and so to gain greater benefit from the ERP, but such differentials appeared to relate more to an area’s leadership and staff than to any other single factor.
- Approaches to training affect user satisfaction and acceptance of the student ERP. Although consultant training was used effectively for specific projects and one on one, information from the case studies suggests that consultant training is not as effective for in-house functional training or for end-user training for performing institutional business processes within the delivered student ERP system.
- Budget factors continue to be a driving force in maximizing post-implementation ERP benefits, with effects on staffing, resource allocation, and acquisition of third-party software solutions. Not all of the case study institutions funded and used backfill employees to release key staff to work on the project full time. Decisions to use (or not to use) backfills were not only budgetary but also philosophical. The implication for practice is that those key functional staff who work on the project prior to “go live” continue to have ERP-related demands on their time in post-implementation. This can drain both human and financial resources even when the goal is to provide operational continuity while simultaneously resolving functional and technical issues within the ERP system.
- Cross-functional interaction among functional and technical areas, staff, faculty, and administration is a continuing necessity in post-implementation. Cross-module IT governance and management of IT project requests are important factors in ensuring that all areas’ customization and enhancement requests receive equal consideration.
- Training or hiring functional and technical staff with the analytical or programming skill sets necessary to

work successfully with the ERP system is critical to maximizing the benefits of the student ERP.

- It may not be feasible or possible for an institution to take full advantage of all the capabilities of a student ERP system. The number of customizations and enhancements completed or under consideration by the case study institutions indicates that there are many areas in which current student ERP systems do not fit the needs of higher education institutions. Higher education administrators need to be aware that the ERP system is not a solution in and of itself; rather, it is one major component of an overall technology plan to meet the needs of the institution and its students.
- No single definition or criterion exists by which to measure the post-implementation success of a student administration ERP project. Case study interview participants shared varying measures, indicators, and definitions of success—or lack thereof. It is noteworthy that participants' job areas and levels of direct involvement in the project appeared to directly influence their views of post-implementation success.

Administrators and managers who desire to quantify the post-implementation success of a student ERP system should consider the dynamic and evolving environment of this technology. The authors recommend consideration of Markus *et al.*'s (2000) five viewpoints by which to measure success in the development of ERP post-implementation measures: (a) technical aspects; (b) economic, financial, or strategic business terms; (c) the extent to which business operations run smoothly; (d) perceptions of an organization's managers and employees; and (e) perceptions of the organizations' customers and other external stakeholders.

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RESHHA

Campus Scheduling Guidelines

THROUGH COLLABORATION, OUTREACH, AND EDUCATION

Analysis of classroom use and utilization data provides essential information for strategic space planning. However, efforts to improve use and/or utilization metrics can be thwarted by ingrained cultural practices, campus politics, lack of understanding, failure to recognize the impact to programmatic needs, absence of a coordinated campus vision, or a combination of such factors. The University of Illinois at Urbana-Champaign used an iterative approach to adapt scheduling practices that had remained unchanged for nearly 50 years. The result was a major cultural shift in scheduling that has improved classroom scheduling efficiency, positively affected the campus's ability to respond to campus needs, and improved students' ability to register for needed courses.

PING

The University of Illinois at Urbana-Champaign (Illinois) is one of the original 37 land-grant institutions, with a current total enrollment of 41,918 students (31,209 undergraduates and 10,709 graduate and professional students). Illinois is home to seventeen distinct colleges and academic units that share the ten square miles of campus space that includes research, outreach, academic, athletic, and performance venues. Typically, large public universities have an average classroom space of only 5 percent (net assignable classroom square feet compared to total campus academic assignable square feet) (Fink 2002).¹ Illinois is comparable, with an inventory of approximately 400 general purpose classrooms, representing approximately 3.8 percent of total academic space (Ruprecht 2004). Also typical is the scheduling model, which is based on a process of a general purpose classroom pool controlled centrally and allocated to departments (based on prior average enrollments and hours of classroom use) for the

purpose of priority scheduling. After a period of priority scheduling, departments and central staff work jointly to schedule all classes in the general pool prior to timetable publication and registration activity. Scheduling several thousand course sections every semester is a complex puzzle involving a multitude of factors that may in fact compete in priority. These include: faculty preference, proximity to instructor offices, historic room assignments, room size, availability of advanced teaching system technologies, anticipated class enrollment, requested meeting time and pattern, new curricular programming needs, and current or planned campus remodeling projects, to name just a few. While a limited number of technologically based optimizers are on the market, Illinois has not identified an optimizer sufficiently robust to solve its unique scheduling puzzle without substantial (and costly) local modifications or workarounds.

Scheduling by classroom allocation has been standard practice since the campus created a general classroom pool model in early 1960; until recent years, it has been the *de facto* scheduling “policy” (Provost letter to “Deans, Direc-

¹ Ira Fink in “Classroom Use and Utilization,” published by APPA in *Facilities Manager* (May/June 2002). This basic and foundational article for classroom space planning can be found at <www.appa.org/FacilitiesManager/index.cfm?ItemNumber=199>.

Table 1.

*Illinois General Classroom Inventory by Capacity,
University of Illinois Urbana-Champaign*

Spring 1986		Spring 2006		Spring 2009	
Capacity	Number of Rooms	Capacity	Number of Rooms	Capacity	Number of Rooms
10-50	332	<50	283	<50	267
51-100	54	50-70	37	50-70	52
101 +	36	70-90	19	70-90	17
		90-125	16	90-125	17
		125-250	25	125-250	24
		250-500	9	250-500	10
		500+	2	500+	2
Total	422	Total	391	Total	389
Enrollment	36,329	Enrollment	41,342	Enrollment	41,918

tors, and Heads of Departments,” Urbana-Champaign, 1960). The classroom inventory was monitored carefully throughout the ensuing decades to keep pace with increasing enrollments and programmatic needs. This allowed schedulers to be flexible and extremely responsive to faculty. However, in the last two decades, approximately 65 smaller classrooms were repurposed; demand for instructional technology increased (only 45 percent of the general purpose classrooms are outfitted with instructional technology systems, or ITS); campus enrollment increased by 14 percent; and coordinating required courses among departments in the inventory configuration became more challenging. (See Table 1.)

With neither a clear scheduling policy to mandate change nor a campus philosophy to guide current practice, fitting all the pieces together became increasingly complex. Scheduling problems began to creep into the routine of producing the class schedule. Of greatest concern was growing evidence that students were unable to register for classes required for timely progress toward their degrees.

The projected closing and renovation of one of the campus’s largest classroom facilities created an opportunity for Illinois to evaluate scheduling issues. In fall 2006, the provost

formed two successive committees: the first was to identify current facility use and scheduling needs with a goal of making long-term recommendations; the second was to analyze data, define critical elements, prioritize issues, and provide a framework for moving forward. Important to the success of these committees were a clear charge from the provost; strong leadership provided by an academic dean; involvement of faculty (including those recognized for excellence in teaching); engagement of facility administrators; and reports and other information provided by functional stakeholders (registrar’s office staff, classroom technology staff, provost’s office staff).

During the first year of study, the initial committee considered multiple topics, including ownership and authority of scheduling classrooms, improving classroom technologies, innovative classroom design, optimizing classroom use, and classroom uses beyond instruction. The committee’s evaluative process culminated in recommendations for the second committee, whose focus soon became the critical nature of the class schedule and its impact on students. Important outcomes of the second committee were the publication of a set of “Guiding Principles for Classroom Space Scheduling” followed by implementation of standardized meeting patterns, both of which were recognized to be major cultural adjustments for the campus. These outcomes are described in detail below. (The full reports of both committees are available at the following Web sites: www.provost.illinois.edu/committees/reports/Instructional%20Spaces.pdf and www.provost.illinois.edu/committees/instructionalSpace.html.)

GETTING DOWN TO WORK

It took several months for the second committee to acquire foundational knowledge. Committee members studied

basic classroom standards and reviewed campus policy and practice as well as the variety of classroom reports available from the Office of the Registrar. The committee also investigated the scheduling practices of peer institutions. As is typical for many large, public institutions, data showed that peak hours of classroom use at Illinois were Monday through Friday between 10 a.m. and 3 p.m. During that time, campus-wide seat fill reached 74 percent of capacity. Yet classroom use on Fridays decreased markedly: Even during peak times, campus-wide seat fill reached only 52 percent of capacity. This compression each day and across the week made it challenging for students to choose a mix of courses to fill their schedules. (See Figure 1.)

Additional insight was gained when the committee looked at campus classroom use and utilization data. According to Ira Fink (2002) in “Classroom Use and Utilization,” classroom use is easily defined as *scheduled classroom hours per total available classroom hours*. “Use” is a measure of classroom occupancy over the typical instructional hours in a week. One common guideline is that a classroom is considered fully used if it is occupied for instruction at least 67 percent of the time or for 30 scheduled classroom hours per 45 total available classroom hours (*i.e.*, 8 a.m. to 5 p.m. daily). The Illinois campus classroom use rate of 54 percent (spring 2006) was less than the target of 67 percent.

The “classroom utilization benchmark” is defined as *the number of workstations occupied per total number of workstations*. “Utilization” is a measure of classroom use efficiency. A classroom is considered fully utilized if 60 percent of the seats are occupied over the defined instructional class week. The Illinois campus classroom utilization figure of 35 percent (spring 2006) was less than the standard of 60 percent.

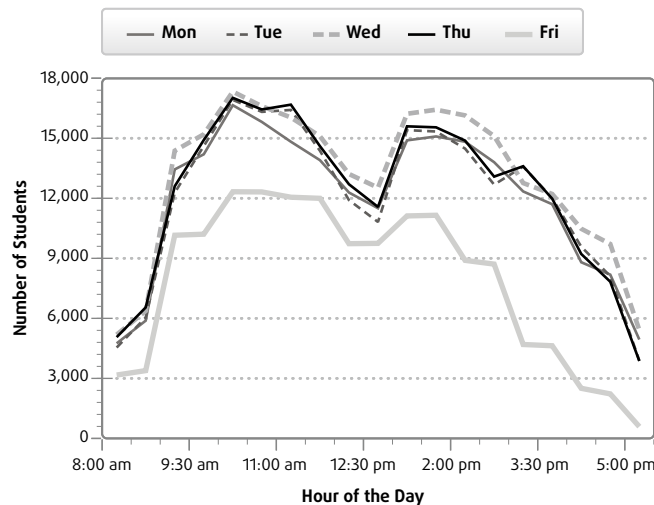


FIGURE 1. Number of Students in Class by Hour Each Day, Fall 2007, University of Illinois Urbana-Champaign

use, and when some courses had sections that were scheduled hourly each day of the week? Careful examination of classroom schedules revealed multiple and varied gaps in the schedule (especially in classrooms shared between departments), non-standard start and end times (for example, beginning at 9:20 a.m. and ending at 10:45 a.m.), multiple combinations of class meeting days that often excluded Friday (*e.g.*, Monday/Wednesday, Tuesday/Thursday, Monday/Tuesday, *etc.*), and various lengths of class meeting times (60 minutes, 90 minutes, 120 minutes, *etc.*). Subsequent compilation of meeting days/times across all courses showed more than 600 unique combinations of meeting patterns in any given semester. The Fink article is clear on this finding: “While such scheduling is likely to accommodate the faculty and course needs, it plays havoc in establishing a continuous use of instructional space.”

The committee recognized that reducing and standardizing the number of meeting patterns was of utmost necessity, but coordinating this schedule across all departments would be a challenge. How would the institution turn this knowledge into action? (Pfeffer and Sutton 2000)

ESTABLISHING A FRAMEWORK

In an effort to meet the standardized meeting pattern goal and to move the campus forward, the committee planned successive implementation stages that were incremental

Campus figures related to use and utilization were less than the standards in most categories of room size inventory, yet staff efforts to schedule courses and register students were becoming more and more challenging. How was this possible when reports were run to match enrollments to room capacity, when campus staff manually scheduled the largest lecture rooms for full daily

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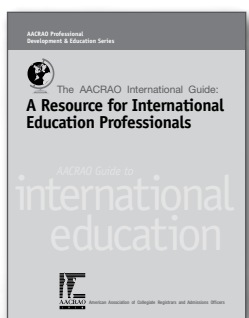
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in nature. Each stage included elements of change management to create buy-in from faculty, administrators, and department schedulers. The overarching goal was to promote education and ongoing awareness and to include several formats for stakeholder input (*e.g.*, a campus survey, college town hall meetings, and departmental consultations). At each stage, staff from the registrar's office provided data to stakeholders and shared anecdotal examples of the positive impact of the changes being implemented.

Five guiding principles were determined to be paramount in reassuring stakeholders of the campus's common goals. The most important of these was repeated throughout the process:

- *"Scheduling should support: (1) the pedagogical requirements of teaching and learning, (2) efficient use of campus resources, and (3) student access to and choice among courses."*

Stage One: Given the closure of one of the campus's largest classroom facilities (Lincoln Hall) and the resul-

tant relocation of hundreds of classes, the committee drafted a set of guidelines for fall 2008 academic scheduling. The scheduling guidelines, which included several suggested meeting patterns, were sent to all deans, directors, and department heads during the fall 2007 term. This allowed plenty of time for departments to work at the local level to study scheduling requests. Rather than mandating any particular meeting patterns, the guidelines requested cooperation and flexibility given the constraints resulting from the building closure. This led to the next guiding principle, which became an important factor in compliance:

- *"Classes taught within the campus standard teaching schedule will have priority and will be scheduled first."*

Stage Two: During the spring 2008 semester, the committee expanded the stakeholder group and solicited feedback to an online survey. The survey helped to maintain awareness of scheduling issues, obtained im-



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portant feedback, and quantified scheduling metrics. It also provided an important opportunity for gauging campus input related to the “soft” scheduling standards that had resulted in many good faith efforts on the part of many departments. The survey helped formulate another guiding principle:

- *“Proper use and scheduling of classroom space is a shared responsibility. Good stewardship is achieved through cooperation among campus units, the Office of the Registrar, and the Office of the Provost.”*

The classroom survey had a high response rate (87 percent of academic units responded) and provided the following information related to standard meeting times: 56 percent of courses were scheduled solely on the basis of instructor preference; 30 percent of units avoided scheduling on specific days (*i.e.*, Monday and Friday); 63 percent had course enrollments constrained by classroom size.

Stage Three: During summer 2008, committee members began an extensive education and listening campaign. They met with college administrators, departmental schedulers, and departments heads (many of whom invited interested faculty) in a town hall format to more fully explain the issues and to present data and survey results identifying campus needs and scheduling challenges. Findings included the following:

- Colleges and departments were willing to change to meet the need of increased utilization and efficiency but needed more guidance in doing so.
- Departments were sensitive to the effect of scheduling on students and their ability to make progress toward graduation.
- Many colleges already were working toward a more standardized schedule (most often as a result of the provost’s initial email).
- Inventory of classroom space in the range of 75 to 125 seats did not meet demand. This provided an opportunity to discuss how optimizing the schedule could free up common classroom resources and reinforced the authority of the provost’s office in setting policies and procedures for managing all campus classrooms and learning spaces.

The committee heard many arguments in support of non-standard meeting patterns, including information about programs with specific pedagogical needs. For example, the history teacher education program needed specific time blocks and days of the week for subject-intensive courses so that students could fit in required classroom observation hours as well as theoretical coursework offered through another unit. The College of Business also communicated its need for reduced scheduling on Fridays so students could participate in all-day workshops with invited guest speakers. Accommodating practicums, internships, and other activities designed to enrich students’ academic experience also was discussed. Faculty raised awareness of other scheduling priorities relating to research and participation in a multitude of activities requiring travel. Overall, the town hall meetings provided a forum for discussion of the unique and often critical needs of multiple programs of study on campus. This led the committee to include more faculty and student perspective in its subsequent guideline:

- *“Practices should always reflect evolving student and instructor responsibilities, educational practices, technologies, and interfaces with other student support services.”*

Stage Four: Together, the survey, town hall meetings, and classroom reports provided the basis for additional recommendations made by the committee to the provost. In November 2008—prior to fall 2009 class scheduling—the provost released a memo providing further incremental adjustments to classroom scheduling policies that more clearly defined expectations for the campus. The memo included the list of guiding principles and a set of policies that established a standard campus teaching schedule. Specifically, classes on Monday, Wednesday, and Friday would begin on the hour (*i.e.*, 8:00 a.m., 9:00 a.m., 10:00 a.m., etc.) for a 50-minute class period; classes on Tuesday/Thursday would begin on the hour or half-hour for either 75- or 80-minute class periods (*i.e.*, 8 am–9:20 a.m., 9:30 a.m.–10:50 am, 11 a.m.–12:20 p.m., etc.).

In a departure from the practice of prior years, the initial copy of the fall 2009 timetable was blank: that is, all classroom assignments had been eliminated so they could be entered “from scratch.” The Office of

the Registrar was given the responsibilities of working with departments to implement the guidelines; making scheduling adjustments based on departmental program pedagogical needs; and finding alternative time or class space when necessary. Allocations to departments based solely on past practice were no longer the norm. If individual faculty balked at changing a classroom location, departmental schedulers were supported by college administrators, central schedulers, and the provost's office—in addition to a written policy—to effect needed changes.

Overall, the response from departments was positive. The Office of the Registrar received few complaints from instructors. Departments were given the opportunity to adjust their class meeting times or to provide a justification for scheduling outside the guidelines. Second and third notices as well as direct phone calls—again asking departments to adjust course times—were issued in February 2009. Those departments that did not respond were notified that their classes would be adjusted to fit the guidelines. Strict adherence to the guidelines was enforced for ITS rooms. For the initial fall 2009 class schedule, more than 80 percent of courses were in compliance by late February 2009.

Like its predecessors, this stage of implementation also was incremental. For fall 2009, the focus was to align the large lecture halls (>50 seats) and the technologically outfitted classrooms (which are in heavy demand) with the scheduling guidelines. In subsequent terms, the focus shifted to the smaller classrooms. Continuing the iterative approach, scheduling staff are working through the entire inventory until all sections in all classroom sizes have been evaluated and scheduled to comply with the standard meeting guidelines. Because the schedule rolls from one like term to another (*e.g.*, fall schedule rolls to fall schedule), staff can lay a foundation over time to reduce inefficiencies.

Unlike institutions that wholly revamped their meeting patterns according to strict criteria (or that may have developed software solutions to preclude departments from entering data if they did not comply), the university made large and sufficient gains as a result of the goodwill compliance by the campus community. To date, only one annual cycle has been completed. A final guiding principle is warranted:

- *“Scheduling policies should undergo periodic assessment and evaluation by a campus committee charged with this task. Policies should be adaptable and flexible.”*

Important as this principle is, it has yet to be implemented.

OUTCOMES

Improvements in use and utilization data are small when viewed across total compilations of classroom data but large when viewed on a room-by-room or sub-unit basis. (See Table 2, on page 42.) The registrar's office has reported a significant increase in the use of the largest and/or most coveted (because of location, equipment, recent remodel, etc.) classroom spaces. A significant result has been the ability to “fit” more classes into these rooms, allowing for enrollment growth in many highly sought-after general education and required courses. Increased efficiency has meant better use of large lecture halls, such that one previously considered plan—to centrally impose the scheduling of several large departmental classrooms—has not been necessary. Closure of the campus's largest classroom has not had an adverse impact on the institution's ability to schedule courses (although a significant contributing factor was the opening of a new instructional facility that is sharing some departmental classrooms during the Lincoln Hall closure). Central schedulers have found it easier to make scheduling adjustments and have been able to locate suitable open space more quickly. Students needing open classrooms for events programming also have found more availability. Student and academic advisor feedback have been positive. The priority and summer registration process for new students has been more successful than in previous summers, with fewer course conflicts. Finally, the nearly 600 unique class meeting patterns have been reduced (thus far) to 500; more progress is anticipated.

With the standard class scheduling guidelines in place, the registrar's office has been able to respond quickly to several campus incidents involving space: a teaching assistant strike lasted only one day but required the relocation of 120 course sections; a building security threat resulted in relocation of 21 classes, six scheduled exams, and twelve student events; and routine operations occurrences (*e.g.*, malfunctioning elevator, broken water pipe, power outage, etc.) required numerous classes to be moved. The most significant positive outcome of the standardized meeting

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Table 2.

Fall 2008 vs. Fall 2009 Selected Room Use, University of Illinois Urbana-Champaign

Bldg-Room	Room Capacity	M	T	W	R	F	Total Weekly Room Hours (WRH)	Percentage Room Use (WRH/45)
FALL 2008								
1ARMRY-101	204	8	6.5	6	5.5	2	28	62%
1BUR-140	70	5	4	7	4	5	25	56%
1GH-112	369	6	5	7	5	3	26	58%
1SMITH-114	750	3	6.5	4	6.5	3	23	51%
FALL 2009								
1ARMRY-101	204	8	7.5	6	7.5	3	32	71%
1BUR-140	70	7	5	7	5	5	29	64%
1GH-112	369	8	6.5	8	6.5	5	34	76%
1SMITH-114	750	6.5	8	6.5	8	4	33	73%

patterns has been the campus's ability to find open class space to accommodate major capital construction projects underway in existing buildings.

CONCLUSION

Change—particularly as it relates to a campus commodity like space—is never easy. In creating, defining, and implementing classroom scheduling guidelines at Illinois, success was achieved through a collaborative and communicative process involving all campus stakeholders. Support for and adherence to the guidelines were the results of a multi-year process and the commitment of an appointed group that studied the issue of space; evaluated current and projected needs; and then took time to educate, listen, and validate the concerns of the campus community. The investment in the process of shifting the campus's scheduling expectations will continue to pay dividends in the academic experience of students and faculty for years to come.

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The Orientation Student Profile Card: Improving the Collection of Student Demographic Information

BY MARLENE CLAPP AND MICHAEL YOUNG

Several years ago, in a *C&U Journal* campus viewpoint article in *The Forum*, administrators at Kennesaw State University (KSU) spoke to the merits of using orientation programs not only to provide information to students but also to collect information from them (Head and Hughes 2006). At Bridgewater State University (BSU), a grant from the Nellie Mae Education Foundation has enabled the university to enhance its data collection efforts during orientation. As a result, BSU is now able to more accurately identify its incoming populations of students of color and first-generation college students.

BACKGROUND

Nationally, the percentage of students who either do not self-identify their ethnicity and race or do not provide clear and detailed information about their ethnicity and race on admissions applications (so as to be properly classified) is reported to be on the rise (Smith *et al.* 2005). Some students may not self-identify out of fear that the information they disclose may negatively impact their chances for admission (Applicants to Selective Colleges 2005/2006; Smith *et al.* 2005). It has been suggested that in addition to collecting ethnicity and race information on the admissions application, higher education institutions also should collect such information after students

enroll, once the pressure of the admissions process has passed (Smith *et al.* 2005). Issues relating to the collection of data on ethnicity and race have been documented outside of the field of higher education, including in the federal Medicaid program (McAlpine *et al.* 2007).

Institutions also sometimes ask prospective students to indicate on their admissions applications the highest level of education completed by their parents or guardians. The Common Application includes such questions, as does the Free Application for Student Aid (FAFSA). It is possible that disclosure fears similar to those regarding ethnicity/race may also exist for students having first-generation college status. In order to limit the number of students whose parents' level of education is unknown, some institutions, such as Indiana University, identify first-generation college students using a reporting logic that pulls data from both a student's FAFSA (if one has been filed) and a student's admissions application (UPIRA 2009).

The literature on underrepresented student populations clearly documents the importance of collecting as accurate information as possible regarding students' ethnicity and race as well as first-generation college student status. Minority students and first-generation college students face obstacles to college entry and persistence (Bowen, Chingos and McPherson 2009; Cuyjet and Asso-

ciates 2006; Engle and Tinto 2008; Fischer 2007; Harper and Quaye 2009; Harrell and Forney 2003; Kinzie *et al.* 2008; Museus and Quaye 2009; NSSE 2006; Pascarella *et al.* 2004; Terenzini *et al.* 1996; Ting 2003; Tinto 1993). Consequently, accurate identification of these students is critical to the implementation and assessment of programs and services aimed at helping them persist and graduate.

THE ORIENTATION STUDENT PROFILE CARD AT BSU

Bridgewater State University is a public institution that falls under the Carnegie classification of Master's Colleges and Universities (larger programs). Total enrollment for fall 2009 was 10,774 students; 97 percent of undergraduates were from New England. As of July 2010, BSU has four schools offering undergraduate degrees: the School of Humanities and Social Sciences; the School of Science and Mathematics; the School of Education and Allied Studies; and the School of Business. BSU also has a School of Graduate Studies and offers continuing and distance education programs.

BSU is committed to serving students in the New England region. This student population includes a sizeable number of underrepresented students. BSU is dealing with intense pressure to serve these students and ensure their success in an environment of increasing competitiveness for admission. In order to identify and implement best practices to help ensure the success of its underrepresented undergraduate students, BSU pursued and was awarded a supporting grant from the Nellie Mae Education Foundation as part of the Foundation's Project Compass initiative. The Project Compass grant included a project planning phase during the 2007–08 academic year followed by a four-year implementation phase for identified project initiatives that launched in fall 2008. At BSU, the four main strategy areas for Project Compass grant initiatives dealing with student success are student programming, faculty development, campus climate, and research.

Improving the identification of students in BSU's target population of underrepresented students, which includes first-generation college students, low-income students, and students of color, was included in the grant as part of the research strategies. Prior to the grant initiative, data identifying students in the target population were lacking. The Financial Aid Office could identify low-income students using Pell Grant eligibility as a defining factor,

but it did not provide reports of this information to the university community. Students of color were identified using information from the undergraduate admissions application. However, consistent with the findings of Smith *et al.* (2005), student applicants often left this section of the application blank. Even less was known about first-generation college students. Information related to such status was not collected on the admissions application, and any information available from the FAFSA was not reported to the university community. The only information pertaining to the education level attained by undergraduates' parents was derived from the CIRP American Freshman Survey. However, not all students who took the CIRP survey authorized the release of their student identification numbers to BSU.¹ Moreover, the response choices on the CIRP survey do not distinguish between a two-year and a four-year college degree. This distinction is important because BSU adheres to the federal definition of first-generation college students: those students whose parents' or guardians' highest education level is less than a four-year college degree. Consequently, individually identifiable first-generation college status was unavailable for sizeable numbers of undergraduates. BSU carefully considered possible ways by which to improve the identification of incoming underrepresented students.

While information about the university's low-income undergraduate student population could be obtained by working with the Financial Aid Office, identifying other target population students was not as straightforward. Following discussions with key staff from BSU's Enrollment Services group, the Office of Institutional Research and Assessment (OIRA) decided to work directly with the staff of BSU's Academic Achievement Center to modify an existing student profile card used during orientation: Could it serve as a mechanism by which to collect more complete information on incoming undergraduate students' race/ethnicity and first-generation college-going status? The decision to proceed was informed by the

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¹ HERI does offer a fee-based data merge service. Along with any other pertinent variables required for subsequent analyses, institutions can send a data file that contains identifying information (name, identification number, date of birth, email, and/or gender) of students to be matched to the HERI survey data file. HERI merges the two files and then deletes the identifying information from the merged file before returning it to the institution. Deleting the identifying information preserves the anonymity of student survey participants who do not grant HERI permission to release their identifying information back to their home institutions; however, it also curtails unforeseen future data analysis needs (*i.e.*, unless the institution is willing to cover the cost of a new data merge).

recommendations set forth in existing research—specifically, that data on race/ethnicity be collected *after* students enroll. This ensures the collection of more refined information on student identities (Smith *et al.* 2005). The modified student profile card, which included new questions on level of parental education, ethnicity, and race, came to be known as the Orientation Student Profile Card. (See Figure 1.)

The Orientation Student Profile Card has been adapted for use with both part-time and full-time first-time freshmen as well as new undergraduate transfers. Efforts to collect information from students via the Profile Card began in earnest with first-time freshmen who entered in fall 2008. Among first-time freshmen, responsiveness to the Orientation Student Profile Card has been favorable. (See Table 1.)

Combined with data from the Financial Aid Office, information students provide on the Profile Card has enabled OIRA staff to better determine the percentage of incoming first-time freshmen who are members of at least one underrepresented student population (*i.e.*, low-income; first-generation college; students of color). The data indicated that 65 percent (976) of the 1,502 fall 2008 first-time freshmen were members of at least one target student group. Similarly, among the 1,479

fall 2009 first-time freshmen, 62 percent (916) were members of at least one target student group. Further, data showed that among fall 2009 first-time freshmen:

- 53 percent were first-generation college students;
- 24 percent were low-income students; and
- 14 percent were students of color.

Modification of both the Orientation Student Profile Card and the timing of collecting student information has improved the university's ability to identify important characteristics of incoming first-time freshmen. Specifically, the number of students of "unknown" race/ethnicity and first-generation college student status has been reduced. (See Tables 2 and 3, on page 46.)

STRENGTHS/WEAKNESSES

Currently, the Orientation Student Profile Card is administered in a paper-based format. This has helped ensure high response rates even as it has resulted in higher costs as staff must devote time to data entry. During fall 2010, as part of institutional efforts to comply with the new IPEDS race and ethnicity standards, BSU will institute an online form that asks students whether they would like

Table 1.
Response Rates on the Orientation Student Profile Card

Semester of Entry	First-time Freshman Enrollment	Number Attending Orientation	Orientation Attendees Indicating Ethnicity/Race		Orientation Attendees Indicating Parental Education	
			%	n	%	n
Fall 2008	1,502	1,493	99.5	1,486	99.3	1,483
Fall 2009	1,479	1,475	99.3	1,464	97.3	1,435

Parent's/Guardian's Highest Level of Education

FATHER'S/GUARDIAN'S:

- ☐ High school diploma or less
☐ Postsecondary other than college
☐ Some college but no degree
☐ Associate's degree
☐ Bachelor's degree
☐ Advanced degree (master's, doctorate, etc.)
☐ Other ()

MOTHER'S/GUARDIAN'S:

- ☐ High school diploma or less
☐ Postsecondary other than college
☐ Some college but no degree
☐ Associate's degree
☐ Bachelor's degree
☐ Advanced degree (master's, doctorate, etc.)
☐ Other ()

Demographic Information:

Do you consider yourself to be Hispanic/Latino(a)?
☐ Yes
☐ No

In addition, please select one or more of the following racial categories that describe you:

- ☐ American Indian or Alaska Native
☐ Asian
☐ Black or African American
☐ Cape Verdean
☐ Native Hawaiian or Pacific Islander
☐ White

FIGURE 1. *Indicator Questions on the Orientation Student Profile Card*

Table 2.

Percentage of First-Time Freshmen for Which Race/Ethnicity is Unknown/Other

Cohort	First-Time Freshman Enrollment	Based on Admissions data		Based on Student Profile Card	
		%	n	%	n
Fall 2008	1,502	4.2	63	1.1	16
Fall 2009	1,479	5.0	74	1.0	15

Table 3.

Percentage of First-Time Freshmen for Which First-Generation College Status is Unknown

Cohort	First-Time Freshman Enrollment	Based on CIRP Data		Based on Student Profile Card	
		%	n	%	n
Fall 2008	1,502	24.2	364	1.3	19
Fall 2009	1,479	36.8	544	3.0	44

to update their race and/or ethnicity information as part of the course registration process. First-time freshmen also will be presented with the online form when they register for courses. First-time freshmen's response rates for the online race/ethnicity form and for the paper-based race/ethnicity section of the Orientation Student Profile Card will be compared. The results will be used to assess the suitability of shifting the Orientation Student Profile Card to an electronic format.

A unique version of the Orientation Student Profile Card was created specifically for new undergraduate transfer students. Primarily because of the nature of the transfer orientation program, compliance among transfer students has been lower than among first-time freshmen (e.g., 51 percent for the fall 2009 entering cohort of new undergraduate transfers compared to 97 to 99 percent for the fall 2009 entering cohort of new undergraduate students). However, after transfer students' low response rates were brought to the attention of transfer orientation staff, an approximately 30 percentage point increase (i.e., 84 percent response rate) was realized for the spring 2010 cohort of new undergraduate transfers. A web-based version of

the Orientation Student Profile Card for transfer students who are unable to attend the on-campus orientation program was introduced in fall 2010.

CONCLUSION

Data compiled from the Orientation Student Profile Card has helped the university better identify its population of underrepresented students. This information is being used as a basis not only for understanding how successful underrepresented students are at the university but also for informing institutional efforts to enhance students' success. Utilization of the Orientation Student Profile Card has contributed to fulfillment of the university's mission; has

strengthened efforts to recruit underrepresented students into programs that can help them succeed in college; and has informed development and assessment efforts for student success programs.

As awareness of Orientation Student Profile Card data has increased, so has usage of the data. For example, BSU's most recent strategic planning process resulted in the adoption of metrics related to Orientation Student Profile Card data. Three such metrics were the freshman-to-sophomore retention rate for first-generation college students, the freshman-to-sophomore retention rate for low-income students, and the freshman-to-sophomore retention rate by student of color status. Six-year graduation rates for these student populations also will be monitored. Incorporating these metrics into the strategic planning process will contribute to the further fulfillment of BSU's mission, which includes a "responsibility to educate the residents of Southeastern Massachusetts and the commonwealth."

Orientation Student Profile Card data have been used in other critical ways as well. As data for the fall 2008 and fall 2009 cohorts of first-time freshmen indicated, more than 60 percent were members of at least one targeted

underrepresented student group. Campus leaders with responsibility for programs that can help first-time freshmen succeed academically have begun using Orientation Student Profile Card data to ensure sufficient recruitment of underrepresented students into their programs. For various reasons, these students—first-generation college students in particular—do not always participate in such programs at a rate comparable to that of their peers (Pascarella *et al.* 2004; Pike and Kuh 2005). Yet participation in such programs can benefit underrepresented students even more than other students (Kuh *et al.* 2007).

In addition to comparing such academic progress indicators as retention rates, it is also possible—and now more commonplace—to compare underrepresented students' program experiences, outcomes, and impacts with those of other students. The BSU Financial Literacy and Giving Program (FLAG) is one specific example of a program for which such outcomes have been compared. FLAG is intended to equip students with tools for financial success. Students who participated in the spring 2010 FLAG

pilot were asked to complete a pre-test and a post-test to measure their financial literacy. Changes in test scores were examined overall, and score changes for underrepresented students and for all other student participants were compared. Evaluators found little variation in response patterns according to student target group affiliation. It is important to note that had some degree of variation been found, changes in the program design may have been warranted.

NEXT STEPS

Data collected to date on level of parent/guardian education will be uploaded to the university's management information system during the 2010–11 academic year. This will both centralize the storage of the data and make it more functionally available. Whether to also update race/ethnicity information in the campus' management information system with data from the Orientation Student Profile Card will be decided after the fall 2010 online race/ethnicity form being used as part of institutional efforts to comply with the new IPEDS race and ethnicity standards



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is compared with the paper-based race/ethnicity section of the Orientation Student Profile Card. Based on the results of the fall 2010 race/ethnicity comparison as well as the level of response by new transfers unable to attend an on-campus orientation session to the web-based version of the Orientation Student Profile Card, the suitability of shifting the card to an electronic format will be further discussed. At some future date, a pilot of a web-based Orientation Profile Card for all incoming students may be developed to coincide with registration. Provided that a high response rate was maintained, an electronic Orientation Student Profile Card would streamline data collection and reduce staff time needed for data entry. At the same time, it would preserve the many benefits the Orientation Student Profile Card has brought to the University.

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AUTHOR'S NOTE: On July 28, 2010, the governor of Massachusetts signed into law a bill that enacted a name change to all state colleges in Massachusetts (except those few that decided to retain their institutional names). Bridgewater State College is now Bridgewater State University.

The Lost Lamb: A Literature Review on the Confusion of College Students in China

BY JIANMEI DONG AND FUBIN HAN

With the development of mass higher education in China, confusion—a contradictory state between college students' awareness of employment, learning, morality, and their own behavior and societal requirements—is proving a ubiquitous problem among college students. This confusion has garnered much social attention. In this paper, the origins of confusion and its countermeasures are summarized. The most significant reason for college students' confusion is the sharp contrast between their role orientation and their social development. We conclude that what a college and a college student are must be rediscovered in the context of lifelong learning.

INTRODUCTION

Since its college expansion plan went into effect in 1999, China has become the country with the largest number of university students in the world. However, a range of problems—particularly those relating to the psyche of college students—are now evident on college campuses. Increasingly, students do not know what career path to choose, what field of study to pursue, or even how to get along well with others. In this article we summarize the literature on the challenges confronting college students in China.

TYPES OF CONFUSION

Employment

College students no longer pursue a clear academic goal, interest, or vocation. Few know what job they want or what job they might perform (Jinxiang Xia 2009). Some researchers have pointed out that dependency, inferiority, conformity, and cognitive bias are psychological traits typical of Chinese college students (Yulin Liu and Qi Yuan 2009). For example, a 2005 survey from China Youth Politics College shows that 51.4 percent of college students have widespread feelings of unease and anxiety because of employment pressure and academic competition.

Learning

Some scholars have theorized that 'learning burnout' results when college students cannot master certain bodies of knowledge; this can result in turn in emotional and physical exhaustion, particularly in the face of sustained high-level pressure (Xuyan Li 2008). From a survey of 260 college students from Inner Mongolia Finance and Economics College, Caiyun Fu (2008) found that 51.3 percent of college students lack learning goals; 34 percent don't like their majors and feel confused because knowledge and information in their major seem useless and outdated.

Most striking, 11.5 percent of students demonstrate such learning burnout behaviors as skipping classes and sleeping in class.

Interpersonal Relationships

Some college students feel uneasy in their relationships with classmates and teachers. Some researchers believe that college students' interpersonal relationships are marked by cognitive, emotional, and personal insecurity (Aihua Yang 2008). According to her survey, 36 percent of college students feel timid and anxious; 21 percent don't know what to think of anyone else and lack communication skills (particularly for employment interviews); and 23 percent simply don't know how to communicate with others.

Morality

Moral confusion pertains primarily to the discrepancy between students' beliefs about morality and their daily conduct. Theoretically, college students have mastered of the majority of moral principles and rules; they also have some ability to discern moral from immoral behavior. But in fact, they don't know how to conduct themselves when confronted with certain practical challenges (Xiangjun Li 2008). In 1996, a nationwide investigation by China Youth & Children's Research Center found that most young people score high marks for helping others whose behavior puts them at risk. However, when asked, "What do you do when someone with a knife in his hand is attacking others?" 34 percent of young people chose the answer "Pretend not to see"; students chose "leave" or "be an onlooker" at rates of 7.4 percent and 7.98 percent, respectively; only 9.66 percent of students chose the response "Stop the crime in a timely manner" (Haiquan Gong 2000).

ORIGINS OF CONFUSION

Employment

Researchers have analyzed Chinese college students' confusion about employment from various perspectives. Some argue that traditional Chinese culture is elitist. Accordingly, college students were considered the most favored people in society. As such, they did not worry about employment at all because the government guaranteed it would assign them work. However, with implementation

in 1999 of a policy of college enrollment expansion, higher education in China entered a stage of popularization: As more and more young people began to study at universities; college students, once highly favored, became mere commoners. Shenglin Li (2009) suggests that some college students have been unable to adapt to their new role, resulting in a state of confusion—particularly regarding future employment. Some argue that many college majors do not meet societal needs. Majors that seem attractive ultimately are not practical. Hundreds of students may pursue a single major. While they gain theoretical knowledge in class, shortages of teachers and field placements contribute to a dearth of practical skills—even though such skills are what society needs most. As one university leader with responsibility for enrollment and employment said helplessly to graduates, "You can find jobs by considering the relationship between your education and your employment as loosely as you can" (Yulin Liu and Qi Yuan 2009). Others believe the current worldwide financial crisis is the primary reason for the closure of many factories and companies in China (Yiwen Pan and Guifang Chen 2009). In fact, according to the 2009 51job Salary Survey Section report, the global financial crisis resulted in more than 25 percent of companies' halting new staff recruitment efforts.

Learning

There are essentially two reasons for students' apparent "confusion" about learning: poor motivation and lack of persistence. Many students have little motivation to learn. A Chinese student who wants to go to college must study hard for twelve years and pass the university entrance exam. By the time students reach college, many are disillusioned with—or simply tired of—learning. Second, some students lack persistence. They become discouraged if they can't pass an exam or if they have difficulty with a certain subject. Some students lack stamina for competition. Although it is difficult to gain admission to university, it is easy to graduate provided a student passes every examination. In China, too many students lose their motivation to learn and lack persistence (Xueyan Li 2008).

In truth, many factors likely are at work. Some researchers believe that middle schools in China fail to adequately prepare future college students. Specifically, students seem unable to make the transition from the strict learning regulations characteristic of middle schools in China to the

open and free teaching methods at the university level. In addition, outdated professional knowledge, rigid teaching methods, and course content limit college students' interest in and commitment to learning (Xie Zeng 2009).

Interpersonal Communication

Reasons for confusion relating to interpersonal communication can be tracked to students' personal characteristics, family background, and prior education (Aihua Yang 2008). Historically, because of the impact of examination-oriented education in China, some parents expected their children to be high achievers and placed too much emphasis on their children's academic performance; they discounted the importance of developing their children's interpersonal skills. College students who struggle with academics may have difficulty communicating with others because of feelings of inferiority. The influence of the Internet is enormous, particularly as it pertains to the associative psychology of college students. More and more students spend so much time living in the virtual world that

they have trouble communicating with people in real life. All of these factors contribute to Chinese students' apparent confusion regarding interpersonal communication.

Morality

With regard to the origins of the moral confusion of Chinese students, researchers point to two factors: the external environment and internal (personal) factors (Mingming Huang *et al.* 2002). After more than 20 years of reform and openness, China is in a transition period from traditional to modern industry. The accompanying societal transformation inevitably affects people's goals and priorities—including those of college students. With the deepening of reform and the opening-up of Chinese culture, Western culture and lifestyles increasingly have influenced college students in China. The collision and interaction between Chinese and Western culture and values cloud and confuse college students' moral judgment.

With regard to internal personal factors, it is difficult for college students—whose psyches are not yet ma-



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ture—to accurately perceive and adapt to society. Students’ moral judgment and ability to make choices are so weak that students often are at a loss when confronted by complicated social phenomenon.

SOLUTIONS

Employment

Some researchers suggest solutions based on policy and regulation: First, the government should build up an open, equal, and fair employment environment for graduates by strengthening the job markets and employment laws and regulations, so as to ensure fair competition and alleviate employment pressure. Second, colleges and universities should reform the education system, with a particular focus on improving students’ science, research, and social skills. Third, universities should take a more active role in preparing graduates for work by establishing employment information service systems and teaching employment and entrepreneurship skills. Finally, a career services center that includes psychological consultation should be established to help graduates overcome challenges relating to employment (Guangjun Zhou 2009). Some researchers’ proposals are for university graduates themselves: For example, graduates should evaluate themselves objectively and adapt actively to society; they should believe in themselves and dare to face the competition for employment; they should take the initiative to be lifelong learners (Yu Peng and Liyan Du 2010).

Learning

Some researchers suggest changes at the macroscopic level. For example, they believe the government should take a less active part in human resources management and adjust industrial structures so as to offer more employment opportunities. Moreover, colleges and universities should reform their instructional systems by adopting less rigid teaching management styles and strengthening the construction of learning atmospheres that inspire students to work hard (Lingjuan Zeng 2005). Other researchers propose change at the microscopic level. For example, some point out that the teaching method is the key link to relieving students from their “learning fatigue.” Survey results suggest that students’ learning fatigue is closely related to teaching level and teachers’ quality. For example, teachers should shift

from lecture-based pedagogies to increased interaction with students; they should explain complex topics clearly, in layman’s-or “plain”-language; and they should teach with enthusiasm and humor (Xiaolin Zhu 2009).

Interpersonal Communication

With regard to dispelling confusion regarding interpersonal communication, researchers propose the establishment of courses in interpersonal communication and the direct teaching of related principles and skills. First, universities must establish relevant courses and develop mental health education and consultation efforts for college students (Dong Wang and Cuizhen Wu 2010). In terms of students’ own interpersonal communication, they should heed such principles as equality, sincerity, activity, and humility (Guangrong Xu 2009). Finally, students must master the following interpersonal skills: making a good first impression; initiating communication with others; being helpful; appreciating others; not criticizing or complaining about others in public; and never telling lies (Jun Wu 2010).

Morality

First, we should change students’ conceptions of morality from being “thing oriented” to being “people oriented”: that is, the work of education is about the whole person. Second, the content of moral education should not focus on students’ political beliefs and ideology but rather on their emotions, interests, desires, and faith. Third, we should diversify the practice of moral education, attaching importance to the role of the Internet—not just the more traditional modes of influence of class, radio, and television—in college students’ daily lives (Hong Tian 2010). Fourth, the moral education of college students depends on the joint efforts of schools, families, and society. We must establish a new education system—one that unifies the efforts of staff, families, and society—in order to increase the validity of students’ learning (Lili Shi 2008). Fifth, moral behavior and habits should be more highly valued. As part of their daily education, students should participate in practical social activities in order to cultivate behaviors reflective of moral norms (Zhiyong Yu 2000). Finally, it is critical to improve the quality of the teaching staff. Deng Xiaoping, the late chairman of China, said that a school’s ability to produce laborers with a cultural and socialist consciousness rested with its teachers. Not

only does a teacher set an example for students, but he also plays an important role in teaching students to be healthy in both body and mind (Bo Jin 2009).

CONCLUSION

Confusion is increasingly a characteristic of college students not only in China but in countries throughout the world. It is a global problem with implications beyond the health of students' bodies and minds: it affects the overall quality of higher education. It is our humble opinion that this survey of the literature clarifies the roles of colleges and college students as well as the relationship of education to societal needs. Higher education is not the end but only one stage of a person's learning. As Tao Xingzhi—"China's John Dewey"—says, "A person's education starts from his/her birth and continues until his/her death." The very concept of lifelong education requires college students to change their self-perception from being social elites to ordinary workers. While colleges and universities should strive to keep their independence through self-management, they must reform their programs in response to societal needs; then they will succeed in producing more and more excellent graduates.

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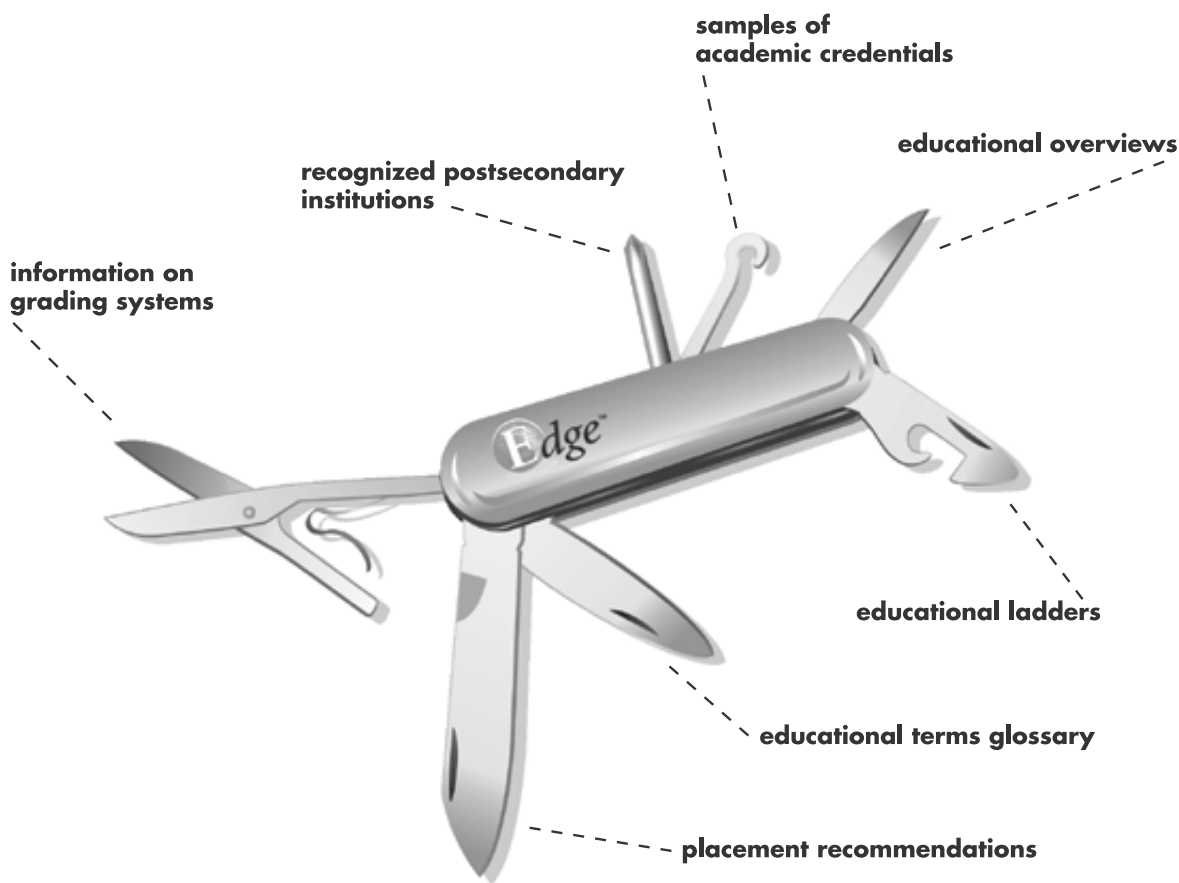
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Not Missing the Future: The Case for Technology and Business Process Change

BY DOUG VANDENBERG

I'll never forget one of my early client consulting assignments for Datatel. The client recently had upgraded its student records software module and wanted to get the most from that investment. My job was to familiarize the front-line records administrators with the new features and functions of the module and to help them modify their business process so as to maximize their resources and time.

The day started well enough. As I was arranging material in an empty training room before class, in came an energetic member of the registration and academic records team. She was very excited about her institution's technology upgrade and the prospect of being able to perform her job more easily. I remember thinking, "If her excitement is indicative of all the others, this is going to be an easy day."

However, as I covered that morning's syllabus with the class, my energetic visitor's upbeat anticipation morphed slowly toward the negative. She became a bit angry—and, I think, a little scared—not of the new technology but about changing business processes in order to fully leverage the technology. I now could see I had my work cut out for me.

As technology has evolved, the opportunity to transform and enhance the business processes of academic records managers has become more attractive. Many institutions embrace business-process change as a part of their ongoing strategy, but others defer—or simply avoid—any

such change. But now more than ever it is imperative that all higher education institutions closely examine how they perform the critical job of processing and protecting academic records.

IT'S MORE THAN JUST CHANGING BUSINESS PROCESSES

In recent decades, change management gurus have given us tons of advice in books, videos, and conference presentations—each with a unique approach. Well, as a result of working with higher education institutions as they have transformed in order to stay successful, I have learned some universal lessons about change management.

President John F. Kennedy once said, "Change is the law of life, and those who look only to the past or present are certain to miss the future." Pondering this wisdom, I think about how different our world would be today if past agents of change had not gathered the courage to take risks and try something different.

There is a well-known story about a producer at Decca Records in London who auditioned—but opted not to sign—The Beatles. After listening to the band, the producer reported to his boss that "Guitar groups are on the way out, and The Beatles have no future in show business." In retrospect, this fateful decision seems odd, and I wonder whether it was based more on fear than on musical

expertise. Perhaps the producer was just trying to avoid the anxiety of a changing entertainment industry he didn't understand?

Fear and skepticism about things “different” or “unfamiliar” is normal. And this is where academic records managers can make a difference. The most successful consulting engagements in which I have participated were those in which managers eased their administrators' stress *in advance* of changing their departments' business processes. When managers communicate often to their staff about coming changes and how those changes will better support their institutions, and when they openly answer the countless questions that are sure to arise, the whole change process runs more smoothly.

BUT WE'VE ALWAYS DONE IT THAT WAY!

It's hard to turn away from trusted processes and procedures that have been in place for many years. So I'm not surprised that during consulting assignments I occasionally hear someone say, “We've always done it that way, and it works fine!” (Front-line employees talking about current processes seem particularly prone to such comments.) *But their jobs are changing because the technology is changing.* Imagine an institution trying to stay competitive if its staff were still typing documents on an IBM Selectric Typewriter rather than on a computer. Playing it safe and trying to stay comfortable, as the Decca Records producer might have done, can create a stagnant environment that will leave an institution “behind the curve” and uncompetitive.

Often, applying an old process to new technology is like trying to stuff a square peg in a round hole. Indeed, new technologies and the new business processes they require allow colleges and universities not to miss the future. And given the ever-growing demands of tech-savvy students who expect nothing less than superior service, moving forward is the only option. But knowing you need to move forward is one thing; actually moving forward is another—and one that requires more than encouraging

words from a technology consultant. Moving forward requires a shared sense of purpose and courage.

Academic records managers play an important role in the change process in the registrar's office. As mentioned earlier, when managers open the lines of communication with their front-line staff well before the technology and business-process changes are implemented, their institutions have the best chance of making a successful paradigm shift. By being included in the change process, those staff who will be affected most begin to recognize the capabilities of the new technology and to think about how to apply the required new business processes to their specific responsibilities. Once the shift takes place, staff members begin to “own” the coming transformation. Buy-in is complete because staff members' fear and anxiety are replaced by a solid understanding of why change is taking place.

But process change doesn't end there. Colleges and universities must continue to plan for the near term and for the long term and to review their technology and business processes continually in order to renew them. (This is true for all business areas, not just records management.) Only in this way will institutions of higher education stay competitive, sustainable, and successful in graduating students who will thrive in an ever-changing world.

Let me leave you with a thought from Ramsey Clark, who served as attorney general under President Johnson: “Turbulence is life force, it is opportunity. Let's love turbulence and use it for change.”

As for the woman who began my morning class with her negative reaction: She had her “ah-ha” moment by the lunch break. Her attitude change was clear to the rest of the class, and the whole day ended on a positive note.

About the Author

DOUG VANDENBERG is a senior consultant at Datatel, Inc. He has served as registrar at Davenport College-Kalamazoo Branch and at Texas State University-San Marcos and as associate registrar at Western Michigan University.

Incorporating Texting into Your Communications Mix

BY DAVID WALLACE MARSHALL

OVERVIEW

In October 2009, St. Mary's University invited prospective students to sign up for "text updates" (text messages). As a result, the university realized—and continues to realize—increases in numbers of applications, deposits made, and enrolled students. Prospective applicants who opted in for text updates were nearly seven times more likely to convert to an applicant; nearly half of all students who enrolled at St. Mary's were active text update subscribers.

Targeted text messages sent to prospective students' and their families' mobile phones provide important updates about admissions deadlines and events. Because mobile phones are personal devices (more wristwatches than computers) updates must be relevant, valuable, and important to the recipient.

CHALLENGE

St. Mary's University is the oldest Catholic university in Texas and the Southwest United States. Like many institutions, it is in a highly competitive market. Numerous other colleges and universities (including other private and Catholic institutions) are in the San Antonio area. Along with a decrease in the number of search responses, St. Mary's (again like other institutions) experienced an increase in stealth applications or "secret shoppers." That

is, more and more prospective students remain "hidden" until the applicant stage. St. Mary's also had a branding challenge: how to balance 150 years of tradition while still appearing innovative.

RESEARCH

If you have children between the ages of thirteen and eighteen, or if you have spent even just a few minutes in any admissions office waiting room, you will agree that the anecdotal evidence is that teens prefer texting to other communication mediums. In 2009, The Neilson Company reported that the average teen now sends or receives 2,899 text messages per month—nearly 100 text messages per day—compared to just 191 calls! Texting has increased 566 percent in just two years. More than half of all U.S. teen mobile subscribers (66%) say they actually prefer text messaging to calling; 34 percent say it's the reason they got their phone.

In June 2010, *The Chronicle of Higher Education* reported that 97 percent of students use text messages as their primary form of communication. The study confirms our presupposition: Cell phones are ubiquitous on college campuses, with 99.8 percent of students owning one or more. But in the national survey of approximately 500 students (the survey has been conducted twice a year

since 2005), new details emerged regarding the kinds of phones students own and how they use them.

Text messaging has overtaken not only e-mail but also instant messaging in popularity: Whereas 97 percent of students use text messages as their primary form of communication, only 30 percent use e-mail and 25 percent use instant messaging as their primary form of communication.

The mobile phone provides unmistakable immediacy. Texting does not rely on users' going online, checking e-mail (an activity consistently declining), or sifting through snail mail. Targeted texting reaches prospective students at any time, wherever they are.

Consider this anecdotal evidence: Virtually 100 percent of text messages are read. Have you or has anyone you know ever received a text message that was not read? Compare that to any other communication medium.

APPROACH

As mentioned, the mobile device is highly personal. In helping a client prepare its mobile communications plan, we carefully consider what messages will be texted to which students (and/or parents) and when. Remember that the mobile phone is “more wristwatch than computer,” and treat people like humans rather than “users.” Failure to do so may “put off” prospective students. Respecting people's time; adding value; and generating authentic excitement will deliver the best results.

In the enrollment world, the traditional approach is to buy a list of students' names and then to mail brochures and information about the institution. Targeted texting takes the opposite approach: It begins with building an “opt-in” database.

- **Solicit mobile numbers and “opt-in” on all first contact forms.** Present prospective students and parents with the option to receive text updates, regardless of how they initially contact the institution. All inquiry forms and applications for admission should include a mobile number field as well as an opt-in for text updates.
- **Modify print collateral to encourage opt-ins.** St. Mary's updated its print materials—including its viewbook—to promote text updates. It also created a 5 x 7 card for distribution at college fairs (See Figure 1). Too often, prospective applicants who attend such fairs crouch on one knee repeatedly filling out inquiry



FIGURE 1. Sample Print Collateral

cards for those institutions in which they are interested. Enabling prospective students to connect with an institution by texting a keyword (stmarysu) to a shortcode (313131) saves the student time and can be done at any time (e.g., in the car, at night, at the college fair).

- **Create an opt-in for text updates on the admissions Web site.** Too many prospective students remain “invisible” (hidden) until they submit applications for admission. Text updates reduce the number of stealth visitors to an institution's Web site by providing a “half step” through which they can identify themselves (yet without revealing their full identities) prior to completing admission applications. (See Figure 2a.)

Without leaving the admissions Web page, prospect information is collected as students opt in. (See Figure 2b.)

St. Mary's Web site invites each visitor to identify whether he or she is a student or parent; the prospective entry term; intended major; and mailing address. This information is just enough to allow for an easy sign-up process and, if desired, to create a new or updated inquiry or applicant record in the student information or CRM system.

TEXTING CAMPAIGNS

Prospective students who opt in for text updates receive between zero and five text messages per month. The type of messages sent depends on the stage at which the prospect is in the recruitment cycle. For example, during the

search process, St. Mary's offers the response option of "text stmarysu to 313131." Notice that words often are shortened—for example, "U" appears rather than "You," as does "52 wks" rather than "52 weeks." In the texting medium, shortening words is the norm; not shortening words is perceived not only as wordy, but as cold and out of touch. (Besides, text messages are limited to 160 characters—including spaces.) It is a fine line: Prospects may perceive too much shortening of words as trying too hard to relate to "kids these days."

During the inquiry stage, messages are sent as invitations to events (including campus visits) and as reminders of important dates. (See Figure 3.)

During the applicant stage, messaging is used to encourage complete applications; to track down missing documents; to ensure that a prospective student's financial aid is in order; and even to announce scholarships. (Of course, St. Mary's also mails hard copy of official scholarship announcement packages.) (See Figure 4.)

From "Accept" to "Day 1 on campus," text messages are sent to build pride and affiliation, to encourage deposits, and to invite students to orientation. (See Figure 5.)

FIGURE 2A. Students Opt-In on the Admission Site

FIGURE 2B. Inquiry Information is Collected

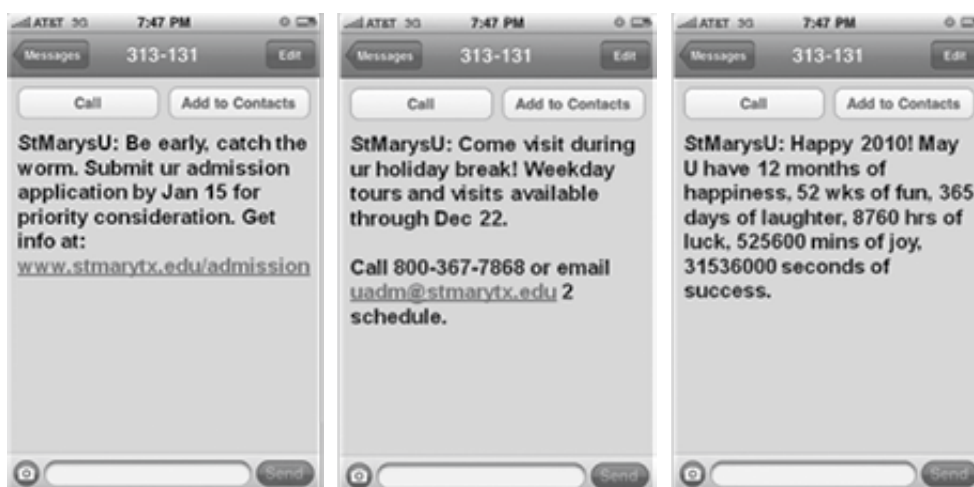


FIGURE 3. Sample Inquiry Stage Messages

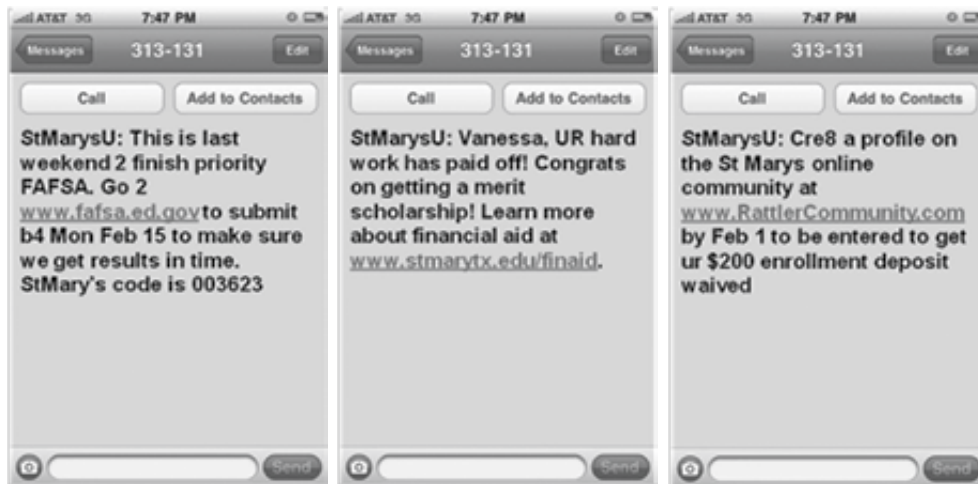


FIGURE 4. Sample Applicant/Accept Stage Messages

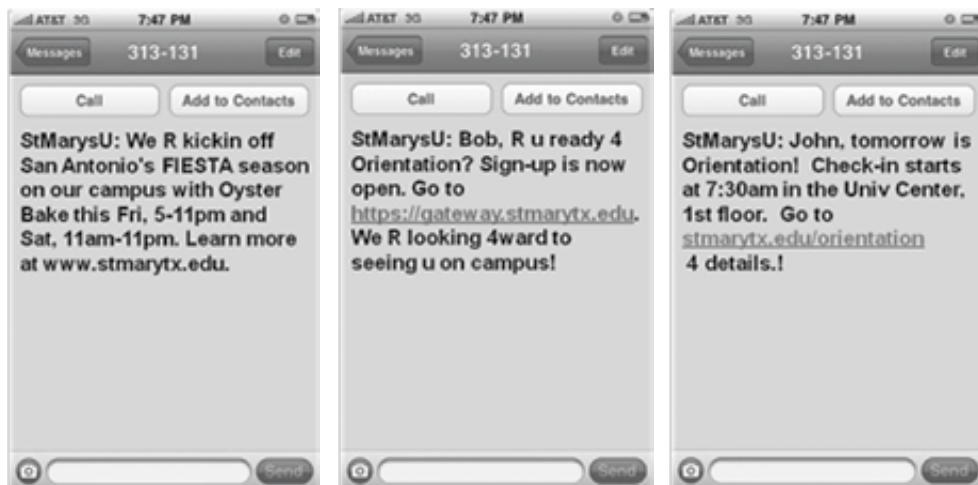


FIGURE 5. Sample Deposit/Enroll Stage Messages

RESULTS

St. Mary's University began to collect mobile numbers (and to solicit opt-in to receive text updates) in October 2009. For prospective students who opted in, St. Mary's used texting to strengthen the relationships that admission counselors work diligently to build throughout the recruitment cycle. The university sent friendly reminders of key application dates and packing lists for overnight visits, but the "overarching goal was to use the service to craft an image of St. Mary's in the students' minds and

imaginations," explains Suzanne Petrusch, St. Mary's vice president for enrollment management.

Many institutions sponsor a key event: Prospective students who attend the event are much more likely to enroll than those who do not attend. At St. Mary's, a key event is Sleeping Bag Weekend. One week before the event, invitations are texted to students who have not yet registered for it. To those who have registered, the following friendly text message is sent the night before the event: "*StMarysU: Hope ur packed and ready 4 Sleeping Bag Weekend. We r*

excited 4 ur visit. Don't 4get ur toothbrush! Call 800-367-7868 or email uadm@stmarytx.edu with ?s." For the most recent Sleeping Bag Weekend, 68 percent of attendees were active text update subscribers.

St. Mary's goal was to carefully craft the brand of the institution. Branding is so much more than just a logo or color palette: It comprises a complete set of experiences related to the institution. To effectively cultivate that brand, all touch points must be carefully managed. Imagine you are a prospective student packing and preparing for a weekend sleepover event. A new text message comes in: It's the institution reminding you not to forget your toothbrush! The powerful and

Table 1.
Prospect/Student Interest in Text Updates

Status	Percent Opting In
Inquiry	4.7
Applicant	30.6
Deposit	47.7

personal nature of the mobile phone results in a positive and personal brand experience.

For the fall 2010 semester, a total of 1,685 of 35,000 inquiries—a little less than 5 percent—opted in for text updates. Of those 1,685 students, 68 percent converted to applicants, compared to an overall conversion rate of only 10.5 percent. (See Figure 6, on page 62.)

Even more astounding, 47.4 percent of students who enrolled at St. Mary's were active text update subscribers. Text update subscribers either already were or became highly interested in the institution.

Conversion and yield are key metrics for any institution. Consider St. Mary's application conversion (per-

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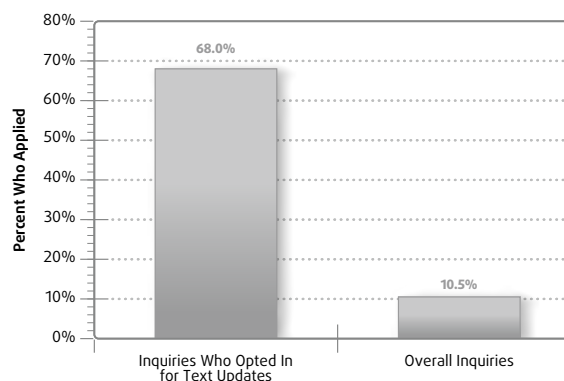


FIGURE 6. *Inquiry to Application*

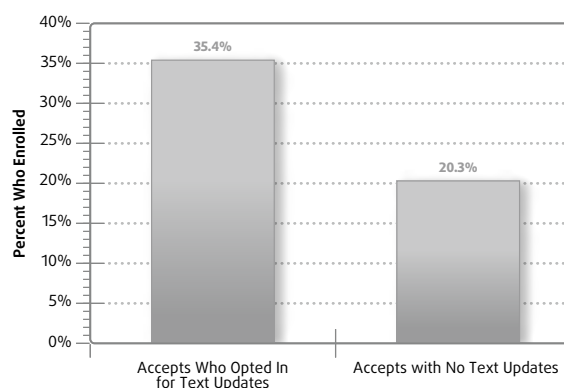


FIGURE 7. *Accept to Enroll*

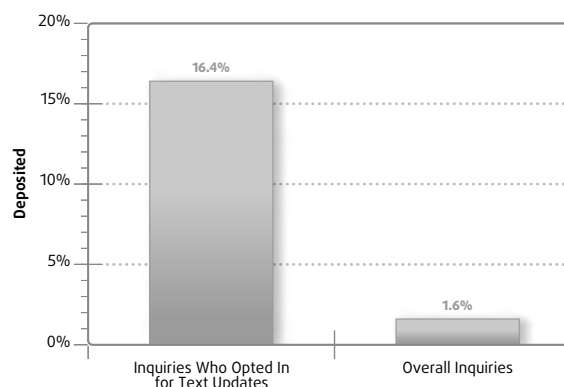


FIGURE 8. *Inquiry to Deposit*

cent of inquiries who eventually apply for admission): 68 percent of text update subscribers converted to applicant status. That makes sense: Students who are genuinely interested in an institution are more likely to opt in for text updates and are more likely to apply. This is another measure that enables St. Mary's to qualify the inquiry pool.

St. Mary's received 3,736 applications for admission in fall 2010. As at many institutions, applications are on the rise: St. Mary's received 53 percent more applications for fall 2010 than for fall 2009. Yet prospective students also are applying to more institutions. For that reason, the yield from "accept" to "enroll" is a key metric. Text update subscribers enrolled at a higher rate than non-text update subscribers (35.4 percent and 20.3 percent, respectively). (See Figure 7.)

Another measure of enrollment success is deposit yield. In this case, the percent is of inquiries who eventually make a financial commitment to attend the institution. Of St. Mary's 35,000 inquiries, only 1.6 percent eventually deposited, compared to 16.4 percent of text update subscribers. (See Figure 8.)

CONCLUSION

In the midst of a highly competitive environment, St. Mary's University successfully generated more applicants, more accepts, and, most important, more deposits. The institution successfully balanced 150 years of tradition with innovation. Text updates now provide the institution with a distinctive component to its communication mix. The unmistakable intimacy and immediacy of texting promote stronger relationships with prospective students and outstanding enrollment outcomes for the university.

About the Author

DAVID MARSHALL is founder and president of Mongoose Research, Inc. (The Targeted Texting™ Platform from Mongoose Research manages all of the text communications discussed in this article.) Co-founder of LiquidMatrix, the company that dominated the Admissions Marketing Awards for nine consecutive years, Marshall is a frequent conference and workshop presenter and author of numerous articles on using technology to recruit students more effectively.

**MARKETING COLLEGES AND UNIVERSITIES:
A SERVICES APPROACH**

BY THOMAS J. HAYES
CASE, 2009; 215 PP.

Reviewed by Brian A. Vander Schee

Many students perceive college attendance as a given. To them, colleges and universities are mere commodities if factors such as location, relatives who are alumni, or other defining characteristics beyond institutional control weigh heavily in the decision-making process. As a result, differentiation based on services marketing concepts can make all the difference in student recruitment and retention. In fact, author Tom Hayes' perspective is that institutions should view themselves as recruiting *alumni* rather than prospective students.

The book suggests that many higher education marketers came through the ranks of academia and thus lack services marketing experience; others migrated from corporate America and thus do not have a full understanding of the academic cultural climate of most college campuses. The broad view presented in this book is appropriate for this mixed audience. However, to the seasoned enrollment manager, some parts may seem rudimentary. (Such is the case in Chapter Two, which considers the influence of culture on student choice. The suggestion that estab-

lishing an office on campus to assist international students in securing the government documentation necessary to attend the institution is common sense. At the same time, the idea that an institution must assess the needs of its target population and provide efficient services to meet those needs is sound.)

Chapter One, *Marketing 101*, discusses the need to add physical evidence, processes, and people to the traditional four Ps of marketing—namely, product, price, place, and promotion. *Physical evidence*, such as buildings, equipment, and landscaping, reflect the quality and excellence (or lack thereof) in intangible services. *Processes* include consistency in curriculum delivery or course registration while *people* describes a high-touch environment where students come first. The author uses customer satisfaction as one of several practical examples in this chapter. The criteria used for measuring customer satisfaction differ for physical goods in contrast to services: Whereas customers can try on a pair of shoes or test drive a car before making their purchase, the service of higher education is paid in advance and then is produced and consumed at the same time with no guarantee of satisfaction (*e.g.*, get a good job, become enlightened, etc.) even after the service experience is complete.

In Chapter Two *Making the Big Decision*, Hayes suggests that institutions should craft branding messages that

embody the services marketing environment on campus. His sage advice includes a quote by Steve Brown of Arizona State University: “The customer is in the factory” (52). The inference is that students experience service on campus while it is being developed and delivered. As a result, every aspect of prospective students’ visits should be coordinated to reflect an ideal yet authentic environment. This chapter could go one step further to discuss the implications for the online services environment to address virtual connections before students arrive on campus.

Chapter Three, *The Challenge: Delivering High Quality Service in Higher Education* suggests that satisfying students is not enough. Institutions must focus on earning student loyalty by exceeding their expectations to the point where they would definitely return for future semesters; highly recommend the institution to others; and claim overall personal satisfaction. Student loyalty is accomplished by services processes being in place and recovery mechanisms being used when problems arise. For example, neglecting to fulfill a student transcript request in a reasonable time frame (perhaps because it was misplaced) can be addressed by accepting institutional responsibility, offering a sincere apology, making amends by providing a nominal gift card for a local coffee shop, and then reviewing the transcript ordering process to ensure that such service failures do not occur in the future.

Chapter Four, *Building the University’s Marketing Efforts*, opens with the supposition that marketing in higher education is not a novelty but rather a necessity. Hayes accurately describes the current plight of collegiate marketing when he says, “Too often, distressed colleges look to marketing not just as a life preserver but as a silver bullet that will not merely get them out of immediate trouble but will raise them to new height” (75). A more effective approach sees marketing as part of daily campus operations. This can be exemplified by the service profit chain wherein employees are treated well so they are satisfied with their jobs and thus provide good service delivery to students, which leads to loyal customers, resulting in turn in increased revenue and institutional growth. This touches on enrollment management practices where Hayes discusses DePaul University as an institution where enrollment and marketing efforts are led by one senior administrator.

In Chapter Five, *Acquiring and Using Marketing Information for Strategic Decision Making*, the author develops

a strong case for how higher education marketers may not be objective in their perception of institutional culture, climate, and characteristics. The need for marketing research becomes readily apparent. Depending on their purpose, studies can help to assess institutional perception or image, competitive positioning, pricing, issues, or student performance. Hayes follows up with an extensive list of data sources, analyses, and reporting.

The title of Chapter Six, *Strategic Planning and Organization*, is neither catchy nor detailed. The content of the chapter, however, is a compelling argument for a carefully constructed and implemented strategic marketing plan. The most telling rationale for its place in this part of the book comes from the list of most common reasons for institutional failure. They include lack of a long-term institutional mission; failure to establish clear goals and objectives; inadequate financial planning; and failure to create and communicate the plan. Hayes then takes readers step by step through the strategic planning process in the context of a services marketing environment with an emphasis on strategy formation and analysis. His application of common marketing tools, such as the Boston Consulting Group Growth-Share Matrix and the Service-Market Opportunity Matrix in the higher education setting, is practical and insightful.

Chapter Seven, *Segmentation*, outlines marketing strategy from segmentation to target marketing and positioning. The strength of this chapter lies in the author’s adaptation of generic marketing strategy principles to the higher education services-specific domain. For example, when selecting points of differentiation for gaining a competitive advantage, traditional options such as image, channel, and product are replaced with location, technological competence, and personal attention.

In Chapters Eight and Nine, entitled *The 4 Ps* and *The Three Ps of Service*, Hayes discusses how the four traditional elements of the marketing mix—product, price, place, and promotion—can be adapted to the services context of higher education. He elaborates on the additional marketing mix elements—physical evidence, processes, and people—introduced at the outset of the book. In discussing service touch points, higher education marketers should assess the value and effectiveness of current student interactions in terms of their ability to enhance the student experience. This process can be enriched by

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functionally integrating academic and non-academic service operations and providing student service and leadership training for both faculty and staff. These steps serve to build a brand strategy that delivers on its promise of value and consistency.

Physical evidence often is used as a defining qualifier in the absence of physical products, as in the case of higher education services. This includes first-impression elements such as landscaping and the condition of the buildings on campus. Even classroom temperature, lighting, and furniture comfort inform prospective students' assessment of educational quality. Some characteristics, such as the physical location of the campus and weather, are beyond institutional control. In contrast, physical evidence should be a priority because it is within the institution's control. Processes and people also are controllable aspects that require institutional attention. This necessitates considering policies and practices from a student perspective and training staff to operate with a mentality that students are customers.

The book closes with Chapters Ten and Eleven, on *Retention and Relationship Strategies* and *The Future of Marketing for Higher Education*. Here Hayes makes the case that student retention is just as important as student recruitment. He offers 40 retention strategies that could be utilized by any institution. Experts in the field also weigh

in on where the discipline of higher education marketing is headed. It is anticipated that integrated marketing and branding will assume a functional role similar to the one established at DePaul University, where marketing and enrollment efforts are coordinated systematically.

Overall, the book reminds readers that there are still those in higher education—namely, faculty—who view marketing with skepticism, disdain, or indifference, depending on their perceived role in attracting and retaining college students. However, ignoring a professional practice that is clearly ensconced in the daily operations of higher education is neither wise nor profitable. Each chapter provides take-away messages that align the text more with trade publications than with purely academic ventures. This user-friendly approach adds to the practicality and readability of the book. It is appropriate for administrators who would like to broaden their horizons regarding marketing in higher education and for other academic professionals who need a resource for educational services marketing.

About the Author

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