Higher Education Preparation and Decision-Making Trends among International Students

Comparison of Biology Student Performance in Quarter and Semester Systems

Teleworking in Higher Education: What Managers Should Know Before Developing Teleworking Policies

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The publication timeline for *College & University* is such that I am writing this editor’s note in early April, just before the AACRAO Annual Meeting. As I reviewed the program to plan my schedule at the meeting, I couldn’t help thinking that so many of the sessions would make excellent article topics for *C&U*. If you’ve presented at the Annual Meeting, or another conference, consider turning your presentation into an article for *C&U*!

This edition contains three research-focused articles. Krishna Bista examines how international students obtained college information when they were in their home countries and how that played into their decision-making process.

Brian B. Gibbens, Mary A. Williams, Anna K. Strain, and Courntey D. M. Hoff compare student performance in biology courses before and after the switch from quarters to semesters at the University of Minnesota–Twin Cities. Student performance was assessed by examining grade distributions, point totals, and scores on archived exam questions.

Kristen Albright Waters reviews the history of teleworking and research on the benefits and challenges it presents, identifying information managers should know before developing policies for teleworking.

This edition’s Forum section includes several timely articles. Monique Perry provides pragmatic strategies for addressing the expectations of students in the Millennial generation.

Stephen J. Handel offers ten interesting observations on the significant changes that have occurred in college admissions during the past decade.

Ashley D. Edwards and Rodney L. Parks recount the experiences during the transition to college of five undergraduates who had sustained traumatic brain injuries while in high school and suggest steps institutions can take to enhance the college success of students with such injuries.

Kenneth McGee describes the important role that the financial aid office plays in the achievement of institutional enrollment management goals and provides examples that can assist financial aid offices in supporting those goals.


I recently was asked by a friend for examples of innovative Registrars and innovative practices in Registrar’s Offices. I gave him several examples, based on presentations I’ve attended, conversations I’ve had with colleagues, and articles I’ve read. Several of the people I cited will be writing for upcoming editions of *C&U*. I’d love to hear about innovative practices in your office!

Jeff von Munkwitz-Smith, Ph.D.
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THIS PAPER Examines how international students obtain information about college in the United States when they are in their home countries. The findings reveal that the majority of students visit university websites to obtain information regarding various programs. Students also receive scholarships and/or assistantships from the university, financial support from family, and encouragement from their friends and relatives to study overseas. Students are self-motivated to pursue higher education in the United States in order to obtain better professional opportunities. These findings will help college administrators and faculty improve the quality of campus resources, including admission and recruitment materials, and will address the concerns of international students on their campuses.
Today, the United States of America has the highest international student enrollment (819,644 students in 2012–13) of any nation, including the United Kingdom, Australia, and Canada (Open Doors 2013). Students around the world view the United States as a land of opportunity. Their choices to attend U.S. higher education institutions are associated with a wide range of factors, including scholarships and other financial assistance, relatives, and bilateral exchange programs between home and host universities (Kolster 2014, To et al. 2014). Students from China (28.7%), India (11.8%), and South Korea (8.6%) dominate international student enrollment in the United States, but emerging trends show increasing enrollment by students from Saudi Arabia, Vietnam, Mexico, and Brazil (Open Doors 2013).

The majority of international students attend U.S. colleges and universities in California (111,379), New York (88,250), Texas (62,923), Massachusetts (46,486), Illinois (39,132), and Pennsylvania (37,280) (Open Doors 2013). (Research does not reveal the precise factors that limit international students’ attendance at institutions in other states.) U.S. colleges and universities have improved the resources they make available to international students—for example, English as a Second Language (ESL) programs specifically for Chinese and Saudi Arabian students (World Education Services 2012).

International exchange programs between U.S. universities and those in foreign countries are another recent trend. Given budget cuts and increasing competition, U.S. institutions “compete hard for talented and self-funded students” (World Education Services 2012).

Despite increasing international enrollments in U.S. postsecondary education, there are challenges related to cost, distance, visa complexity, and competition for students and colleges (Marklein 2011). The potential to recruit more international students exists, but U.S. institutions have not established themselves as leaders among their competitors: A few universities in the United Kingdom and Australia (e.g., the University of Buckingham, Central Queensland University) have international student populations that constitute more than 50 percent of their total enrollment. According to the World Education Services (2012), effective recruitment practices—including recruiting agents and liberal immigration policies for visas and traveling—are the primary causes of high enrollment at these institutions.

The purpose of this paper is to examine how international students obtain information about their chosen programs of study while in their home countries; what fac-
LITERATURE REVIEW

Push and Pull Factors

International students choose particular programs and locations in the United States for a variety of reasons, including relationships with other students, family and peer influences, local and national policies, and other motivational factors.

Essentially, “push” and “pull” factors influence international students’ decisions related to studying overseas. The push factors “operate within the source country and initiate a student’s decision to undertake international study” while the pull factors “operate within a host country to make that country relatively attractive to international students” (Mazzarol and Soutar 2002, p. 82).

“Push” factors include the availability of financial aid, high-quality education, cutting-edge educational and research facilities, the opportunity to gain international experience, and a favorable environment for improving English language skills (González et al. 2011, Rounsaville 2011, Wilkins & Huisman 2010). “Pull” factors include the quality of education, high institutional rankings, better employment prospects, opportunity for improving English-language skills, and post-study opportunities (Rounsaville 2011, To et al. 2014). Kolster (2014) found that international students specified the prestige of higher education systems and research, globally accepted degrees, usage of English, and political influence in the world as the top factors that attracted them to study in the United States. Less important factors were reasonable living costs, international study environment, affordability of tuition, and work opportunities in the host country during study and/or after graduation (Kolster 2014).

Motivation Factors

For many self-funded students, tuition costs, visa expenses, application fees, and travel and other daily living costs are major concerns (Rounsaville 2011). It is natural for international students to seek financial support from their host universities, though this trend is more prevalent among graduate than among undergraduate students. For example, Indian graduate students who enroll in master’s and professional degree programs often work on campus to offset tuition costs (Fischer 2014).

International students pursue education abroad not only to gain international experience and a degree, but also for the opportunity to remain in the host country and find employment (Lasanowski 2009, Rounsaville 2011). According to Lasanowski (2009), the key factors affecting international student mobility are educational affordability, programs in which instruction is in English, and opportunities for employment and migration in the host country. In addition, countries in which English is the primary language are popular because of perceptions of a better quality of education and a better job market.

Role of Educational Agents

Many higher education institutions in the United States, the United Kingdom, and Australia enroll international students with the assistance of special recruitment service providers—i.e., commission-based agents or consultants (World Education Services 2012). Use of these third-party agents has become an emerging phenomenon in higher education. Although third-party recruitment agents help students find colleges, some of their business practices have been found to be “highly dubious and sometimes illegal” (World Education Services 2012, p. 15). Use of third-party agents to recruit international students purely for the sake of an institution’s financial gain and agents’ overcharging parents and students for their services not only have made newspaper headlines but also have elicited concern about academic standards. Altbach (2011) argues that “agents and recruiters are impairing academic standards... and many of these operators—although it is not known how many—have authorization to actually admit students, often based on murky qualifications” (p. 11). Such agents “charge partner colleges $2,500 for each student client who ends up enrolling” (Hoover 2011, paragraph 8) and also charge the student while assisting with college selection and visa preparation.

RESEARCH QUESTIONS

This study is guided by the following research questions:

- How did international students obtain information about their universities’ programs when they were in their home countries?
What were the motivating factors for students to study in the United States?

What were the major challenges students encountered while preparing to study in the United States?

Did students receive reliable information from the educational agents who helped them prepare for their overseas study?

**RESEARCH METHOD**

The research was conducted using a mixed methods approach to ensure the quality of responses and to strengthen the findings; words, pictures, and narratives add meaning to numbers (Johnson and Christensen 2014). This approach offers fuller, deeper, and more meaningful answers to research questions and increases the ability to generalize study findings (Johnson and Christensen 2014). Data were collected using online surveys and face-to-face interviews during the spring 2014 semester.

**PARTICIPANTS AND PROCEDURE**

The target population of this study was 273 international students enrolled at a small university in the southern United States. To protect the identity of the institution, the university is referred to in this article as “Southern University” (SU). An online survey was distributed to the target population of 273 students; 161 responses were returned for a 76 percent response rate. Students did not receive any incentive to complete the survey. The survey was used to collect quantitative data and was written in English; semi-structured interviews were conducted to collect qualitative data. All students (N = 273) received an e-mail invitation to participate in a 30-minute face-to-face or a 60-minute group interview; seventeen students agreed to do so. Participants were offered a $10 incentive to participate in a group interview and $20 to participate in an individual interview. Four group interviews, each consisting of two or three students, and eight individual interviews were held. Interviews were audiotaped and were subsequently transcribed. The researcher analyzed the transposed responses using Miles, Huberman, and Saldaña’s (2014) descriptive codes (e.g., words, phrases, or sentences related to the major themes). This provided insight into the specific content and quality of international students’ study abroad preparation and related experiences.

**INSTRUMENT AND VARIABLES**

The online questionnaire consisted of five parts: pre-departure preparation (8 items), motivational factors (6 items), challenges during preparation (2 items), the use of educational agent services (7 items), and demographic questions (8 items). Students were asked to indicate the degree of their experience on a five-point Likert scale on which one indicated “strongly agree” and five indicated “strongly disagree.” Survey items were informed by examination of the literature (Hagedorn and Zhang 2011, To et al. 2014, World Education Services 2012).

To collect qualitative data, the researcher asked between ten and fifteen semi-structured interview questions, depending on participants’ responses; each interview lasted approximately 20 to 25 minutes. The script for the qualitative interview was informed by the literature (To et al. 2014, WES 2012).

**RESULTS**

**Demographic Information**

Demographic data from the online survey indicated that 56 percent of the 161 international students were pursuing undergraduate degrees, 25 percent master’s degrees, 13 percent doctoral degrees, and 6 percent were enrolled in non-degree programs. The majority of participants reported a grade point average of 3.0 or higher. Approximately 26 percent of students reported that they were assisted by agents during their preparation for overseas study, and 73 percent were not assisted by agents. Eighty percent of participants were unmarried, 16 percent were married, and 4 percent did not identify their relationship status. The average age of participants was 24 years. The top four programs of study in which international students at SU were enrolled were business studies (28%), biology (15%), pharmacy (12%), and computer science (7%). A few international students were pursuing degrees in education, the arts, and the humanities. The top five countries of origin of international students at SU were Nepal (12%), China (8%), Nigeria (8%), Saudi Arabia (6%), and South Korea (6%). Qualitative data were collected from seventeen participants (10 females and 7 males) from thirteen countries; three were graduate students, and fourteen were undergraduate students.
Pre-Departure Information Collection Process

Eighty-one percent of participants reported that they had visited the university’s website and programs of interest from their home countries. Similarly, 74 percent were encouraged by their parents to study in the United States. During pre-departure preparation, 55 percent of students contacted their admissions staff members and professors to inquire about programs, and slightly more than 50 percent reported that they applied to more than one university. Forty-one percent of students also attended study abroad seminars in their home countries that were sponsored by the U.S. universities or the U.S. Educational Centers. Overall, 81 percent of international students reported that they were well-prepared to pursue higher education in the United States.

The Pearson correlation results indicated a medium positive correlation between students who reported, “I checked college/university websites and programs of interest” and students who reported, “I e-mailed university advisors/professors before/during the application” ($r = 0.516, p < 0.01$). Thus, international students who had visited college websites were likely to have e-mailed their future professors or advisors. There were also positive correlations between students who reported, “I checked college/university websites and programs of interest” and those who reported, “I had applied to more than one university for I-20s/admission” ($r = 0.417, p < 0.01$).

When asked about motivational factors for studying in the United States, 88 percent of international students ($n = 126$) reported that U.S. higher education would better prepare them for professional success. Nearly 80 percent reported that they received support from their families; nearly half (47%) reported that their friends influenced their decisions. More than seven in ten (72%) ($n = 115$) received scholarships (or fellowships or assistantships) from the university; 30 percent studied at their own expense; and only 15 percent received support from their home country’s government.

A Pearson correlation indicated small positive correlations between students who reported, “My friends influenced my interest to study in the United States” and those who reported, “I received a scholarship or fellowship to study in the United States” ($r = 0.282, p < 0.01$).

Qualitative Data

Findings from the semi-structured interviews confirmed the quantitative findings about how international students received information about SU programs and what motivated them to study in the United States in general and at SU in particular. The majority of the students ($n = 15$) said that the university website was their primary resource for searching for programs of interest. Five of seventeen participants reported that they attended seminars conducted by U.S. colleges and universities and received information from friends who were already studying in the United States. One undergraduate student from Nepal gathered information from the university website, an agent, and a seminar hosted by U.S. colleges in Nepal:

*From that website I came to know that there is a Nepali student organization here and...I came to know there is the program that I am interested in.... [T]here are a lot of consultancies [agents] back home, and I went there and gathered some more information. I attended three seminars in Nepal that were conducted by U.S. [universities].*

An undergraduate student from Bangladesh said he searched for colleges using the Internet. He also sought information from friends already studying in the United States. Six participants received program and scholarship information from athletic coaches or friends who were already playing for an SU team. An undergraduate student athlete said,

*I’m from Ukraine, and [SU] is considered...one of the best [programs]. It’s...really high-quality education. I think my parents gave a lot of support, and I came for an athletic scholarship. Coaches were looking for me... and...I was looking for a school. I had other options, but I came because of the...connection to coach.*

In a group interview, participants from Australia and Canada reported that athletic coaches and scholarships were the primary reasons for their interest in SU, as they were for the student from Ukraine.

**Participant 1:** It was more of a case of SU choosing me. When I first came here, ...as an undergrad to be on the golf team, I received a scholarship. I actually played a golf tournament back home against
another Australian who was studying at SU, and he helped me through the process. [It] took about 18 months.

Participant 2: SU chose me to be on the water ski team, so I got my first degree with that [scholarship]. [T]he water ski team...sent me stuff, and I chose [to enroll] here because they were giving me a full scholarship.

Participant 3: [The] water ski team...I received [the scholarship] because she was already here, and she is my sister.

In another group interview, an undergraduate student from France shared that she received a scholarship for the water ski team: “I did school in France [for] two years, and they would make you do your two last years in another country...Then I came here for skiing team.” Her friend from Finland participates on the same ski team and also came to SU on a scholarship. An undergraduate student from Costa Rica who came to SU to play volleyball and study statistics was fully funded with a scholarship. A graduate student from Belarus received information from his classmates and friends; he came to SU on an athletic scholarship and is pursuing business studies.

Participants reported that their parents, relatives, and friends encouraged them to apply to a degree program at SU. A graduate student from Australia said,

There’s [sic] always been rumors that [name of the state] schooling is actually poor and that you can’t do much with your degree afterwards, but...I checked with my dad. He didn’t think it would be that way.

Similarly, an undergraduate student from Lebanon received college information and program information from his uncle, who worked at the university. This student said, “My uncle teaches at SU...and said I can come over here where he teaches, and that’s why I came. I just wanted a new experience, a new culture, just to try a new place.”

A few students reported that they enrolled at SU not only because of scholarships and the encouragement of family and friends, but also because of exchange programs between their home universities and SU. For example, an exchange student from Japan said that he received information about the college from his teacher, who distributed the information to the students in her class. Three students from South Korea reported that they came to SU for a semester as part of an exchange program.

Priorities and Challenges During Preparation

Seventy percent of international students (n = 112) reported that finances (e.g., scholarships or other financial support) were a top priority in choosing to pursue higher education in the United States. Approximately half of participants reported that the location and reputation of the university were important factors in their choice of which college to attend. More than six in ten (64%) reported that their choice of program was based primarily on their interest and had affected where they applied. Only 18 percent of international students reported that an on-campus job had been a factor. Some students reported that they considered lower tuition (n = 5), the availability of a water-skiing program at the university (n = 3), an affordable cost of living (n = 2), an exchange program scholarship (n = 2), and participation on an athletic team/program (n = 2) during their college search.

Similarly, 52 percent of international students (n = 83) reported that U.S. visa preparation, which included document preparation as well as preparation for the visa interview, was the most difficult aspect of preparing to study in the United States. Participants also reported the following challenges: finding the right university and program (48%), college entrance exams such as the Test of English as a Foreign Language and the Graduate Record Examination (48%), understanding the application process (41%), and collecting required materials for the application package (e.g., letters of recommendation and college admission essays) (39%).

Findings from Qualitative Data

International students were asked to describe their priorities in selecting a program of study as well as the most challenging steps in preparing to study overseas. Students reported that securing a scholarship, preparing for visa documentation, and passing college entrance exams were some of the most difficult steps. An undergraduate student from Ukraine reported that she not only had to prepare for TOEFL exams twice but also had to convince staff members at her home university that she wanted to apply to U.S. institutions without quitting her current program of study:
I had to pass the TOEFL exam. I found that really hard...many students will look for schools that [either] don’t have TOEFL or have really low [score requirements]...and...I had to pass it twice. After the first time, I had to take courses...like four-month preparation or something. I had to take the test. [My home university] didn’t want to give me my information [e.g., transcript and certificates]. They said, “This is the document we can give to you only if you say that you are done and you quit, but [it’s] your choice.”... I was trying to find a way I can [get a] copy of my transcripts...it was not the easiest. Here I can request a transcript and they will give it to me the [same] day. It was a really...hard process, so they put me in position that I had to quit...and then I was still not accepted, so I was really afraid for...my future...what I will do.

A Nepalese undergraduate student said that filling out information for college admissions was a major challenge and that agents helped him complete the required forms. “I never filled out any application form before.... Whenever I see like three or four copies of forms, I was kind of surprised.... I went to the consultancy [agent] and got help from different people while filling out the forms.”

Role of Educational Agents

Only 26 percent of international students used professional educational agents to assist with their college preparation process. Students reported that they used agents because of their own lack of knowledge about the college application process, U.S. colleges and universities, and the U.S. visa application process.

International students were asked about the quality of information and services received from the educational agents, who operated as non-university-affiliated private counselors for overseas programs. Among the participants who used agents, 15 percent said the agents advised them about foreign countries and college choices, 14 percent received support from agents in applying to college, 19 percent received assistance during visa preparation and counseling, 14 percent thought they were more likely to be accepted by the college(s) to which they applied (with the help of an agent), 14 percent reported trusting the services provided by the agents, and 13 percent asserted that the agents provided correct information about the university.

Pearson correlation analysis revealed a positive medium correlation between students who said, “Agents assisted completing my college application” and students who said, “Agents assisted me in visa preparation and consulting” (r = 0.616, p < 0.01). This suggests that international students who used an agent to help them submit their college applications were also likely to receive assistance with the visa preparation process.

Another positive medium correlation was found between students who reported, “Agents provided wrong information” and those who reported, “Agents’ service fees were too high (expensive)” (r = 0.501, p < 0.01). This suggests that international students who believed an agent provided incorrect information were also likely to pay an expensive fee for an agent’s services.

Results from Qualitative Data

Students reported during the face-to-face interviews that they consulted with agents because of their own limited knowledge of U.S. admissions and visa interview processes. Students reported receiving agents’ support in completing their college applications, preparing for college entrance exams, and preparing for their U.S. visa interview.

An undergraduate student from Nepal shared his experience: “There were so many documents, and I didn’t want it to go wrong.... The [service fee] was pretty high compared to what they provided, but...the information was really helpful.” Another Nepalese student used an educational agent because he wanted to “make sure that [he did] everything right” for his college application, I-20 (admission documentation), and visa interviews.

An Australian graduate student reported on his experience of using an agent:

I knew there were some external recruiting agencies that would basically collect everything that they needed from you and then distribute it to universities. Again, I didn’t do enough research, but it was expensive. [The range is] anywhere from $1,200 to $2,000 dollars for their services, and [you’re] not guaranteed [admission to] the university.

Students from South Korea reported that their educational agents not only helped them find the right college and programs but also helped complete paperwork for college admissions and visa interviews.
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He didn’t know either.
It's a connection between university and university, so actually I just have to buy the visa ... that's all. They fill in the blanks, so I choose only the dates.

FINDINGS AND DISCUSSIONS

This descriptive study focuses on how international students at a particular institution in the southern United States decided and prepared to study in the United States. International students reported that they visited university websites and programs while they were in their home countries, contacted international program advisors and professors, collected admission and visa-related documents, and received support and encouragement from their parents to study in the United States. These findings are comparable with those of recent studies conducted in Asian and European university settings (Kolster 2014, To et al. 2014).

More than 70 percent of study participants received scholarships or assistantships from the university, financial support from family, encouragement to study overseas, and were self-motivated to pursue higher education in the United States in the hope of obtaining better professional opportunities. Participants shared that on-campus employment, scholarships, and programs of study as well as the location and reputation of the university were their primary concerns when applying. These findings are similar to those of Lasanowski (2009) and Kolster (2014), which indicated that international students are motivated to study outside of their home countries by the availability of scholarships and the quality of education. More than half of the participants in this study reported that the U.S. visa interview and document preparation processes were more challenging than college entrance exam (e.g., TOEFL or GRE) preparation, identifying the “right” college and program, and understanding the application process. Twenty-five percent of participants received support from educational agents in finding colleges, preparing application materials, and practicing for visa interviews. However, the other 75 percent did not receive help from educational agents and instead relied on their own knowledge and resources to navigate the process. Although the agent service fees were expensive, participants reported positive experiences in terms of the quality of information agents provided about college selection, application processes, and document preparation for visas and admission. Hagedorn and Zhang (2011) reported a significant trend in Chinese international students’ use of educational agents. Although a few studies (Altbach 2011, Hoover 2011, World Education Services 2012) suggest that service fees are expensive and the services dubious or even illegal, participants in the current study reported that for the most part, agents provided reliable information. Slightly more than 25 percent of participants received financial support from their home countries’ government, but bilateral exchange programs between home universities and SU or special sports-related scholarships also motivated a few international students to enroll. U.S. universities have initiated a fairly large number of international exchange programs. The government scholarship scheme is limited predominantly to student populations from Middle Eastern countries such as Saudi Arabia, Qatar, and Jordan.

There are several implications for individuals involved in international student affairs. For example, administrators and international student advisors should deepen their understanding of the challenges faced by international students and the resources available to them during their decision-making process in order to develop programs related to international student admission, orientation, enrollment, and retention. International students are primarily concerned with finding a safe place to work and study and the right program. Because international students usually cannot visit overseas campuses prior to admission, they may have depended solely on the information available on institutions’ websites. The current study found that 81 percent of study participants visited the university’s website prior to admission. Administrators and faculty thus are encouraged to post timely and accurate information about their programs, scholarships, and admissions requirements.

These findings must be considered in relation to the study’s limitations. First, the findings are based on the self-reported perceptions of students enrolled at one small university located in the southern United States. Students attending institutions in different cultural and geographical locations may have different perspectives relative to higher education in the United States. Such perceptions may affect their values and beliefs and may influence their preparation for enrolling at a U.S. higher education institution. In addition, this study’s conclusions are based on
how and why a small sample of international students at one university chose the United States as their higher education destination. International students who are digital natives obtain information about college and the U.S. education system not only from the Internet and social media but also from print media—not to mention a variety of social and personal contacts, including friends and family members. Future research should focus on larger student samples from diverse U.S. colleges and universities in order to better understand the needs and challenges of international students while they are in the process of seeking information and making decisions about higher education in the United States.

REFERENCES

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COMPARISON OF

Biology Student
Colleges and universities have long debated the utility and effectiveness of different academic calendars. While many calendar systems exist, the early-start semester and the modern quarter system are the most common. The early-start semester begins after Labor Day and runs until Christmas; late-start semesters run from mid-September until late January (Stainburn 2008). The modern quarter system has a year-round calendar such that most students study for three consecutive quarters with an optional summer quarter. The decision to adopt one calendar over another has been based primarily on the perceived benefits to students (Table 1, on page 14) and on the perceived administrative, logistical, and faculty benefits (Table 2, on page 15) associated with each.

Much thought has been devoted to the pros and cons of the semester and quarter calendars, but relatively few studies have addressed their effect on student performance. One study that examined student attitudes about
personal performance in each system found that although students had a slightly lower GPA in the semester calendar (2.443 vs. 2.568), the students believed that the grades they received more accurately reflected what they learned (Mertes 1969). The study's authors speculated that students may have performed better in the quarter system because (1) they were under more pressure to learn the material, (2) the semester exams were more challenging and open ended whereas the quarter exams were based more on fact-recall questions, and/or (3) faculty on the quarter system may have graded less stringently (Mertes 1969). Another study found that changing from a quarter to a semester calendar had an adverse effect on student grades and course completion rates (Coleman, Bolte & Franklin 1984). Because data were examined only from one quarter before and two semesters after the change, this decrease could have been a temporary result. A review of Dutch studies that have examined the effect of academic calendars on student performance revealed that rather than studying throughout the term, students on a semester calendar tended to study right before their exams (Jansen 1993). The review concluded that the “extra time” in the semester encouraged cramming and procrastination.

This work investigates changes in student performance in BIOL 1009, a non-major general biology course at the University of Minnesota–Twin Cities (UMNTC) two and a half years before and two and a half years after changing from a quarter calendar to an early-start semester calendar. Undergraduate student performance was assessed by examining mean final course scores, grade distributions, and

<table>
<thead>
<tr>
<th>Quarter System</th>
<th>Semester System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students can enroll in more classes overall while concentrating on just a few per term.</td>
<td>Extra time is better for classes which require extensive reading, long-term projects, or collaborative research.</td>
</tr>
<tr>
<td>Flexible for part-time and non-traditional students who wish to enroll or change programs at different times due to finances, work schedule, vacations, illnesses, etc.</td>
<td>Provides fewer opportunities for students to enter or exit the system, thus improving retention.</td>
</tr>
<tr>
<td>Some students may find it easier to pay for classes as they can make smaller payments more frequently.</td>
<td>Fewer classes per year means students pay less for textbooks. Most textbooks are written for semesters.</td>
</tr>
<tr>
<td>Coursework intensity motivates students to focus on academics and avoid skipping class.</td>
<td>Allows for an optional review week at the end of each term.</td>
</tr>
<tr>
<td>Students get to meet more students and teachers.</td>
<td>Early-start semester allows students to enter the job market earlier.</td>
</tr>
<tr>
<td>Less time with a professor or student one finds disagreeable.</td>
<td>More one-on-one time exists between students and faculty so they can better get to know one another.</td>
</tr>
<tr>
<td>Students can graduate earlier by attending summer classes or by taking additional courses per term.</td>
<td>Students have more opportunities to study aboard because most universities outside of the USA are on semester calendars.</td>
</tr>
<tr>
<td>Breaks are more frequent.</td>
<td>More overall classroom hours.</td>
</tr>
</tbody>
</table>

question-specific performance on exam questions that were asked both before and after the change in calendar. The exam questions were categorized according to the following topics: evolution, genetics, ecology, cell biology, organismal biology, metabolism, and the chemical and physical basis for life (CAPB). This categorization allowed investigation of whether the change from the quarter to the early-start semester calendar had a disproportionate effect on student performance on a particular topic. This study seems to be the first to assess student performance before and after a change from a quarter to a semester calendar by using the same set of questions to measure student learning.

MATERIALS AND METHODS

Student performance on exam questions from two and a half years before and two and a half years after UMNTC’s switch from a quarter to a semester calendar was analyzed. The terms that were examined included eight quarters (winter, spring, and fall 1997; winter, spring, and fall 1998; and winter and spring 1999) and five semesters (fall 1999, spring and fall 2000, and spring and fall 2001). This time interval permitted evaluation of student performance differences that were not directly related to the change itself. It also maximized the similarities in the student body before and after the change and reduced or eliminated other variables that might have confounded the study. Because summer sessions met for variable lengths of time within the quarter system and also between the two systems, they were not included in any of the analyses. All analyses focused on group data; no information was included that would allow for the identification of individual students. Data collection and analysis procedures were in full compliance with the recommendations of the UMNTC’s Institutional Review Board.

DEMOGRAPHIC DATA

Demographic factors such as ethnicity, nationality, gender, and academic level (i.e., freshman, sophomore, junior, or senior) were obtained from UMNTC’s Office of Institutional...
Research and were analyzed for all students enrolled in BIOL 1009 during the study’s timeframe. During the quarter system, 5,531 students were enrolled in the course, and during the semester system, 3,944 students were enrolled. Chi-square tests were performed to test for differences in student performance during the quarter versus the semester system.

**SYLLABUS COMPARISON**

Course syllabi were analyzed for each offering of BIOL 1009 between winter 1997 and fall 2001 to determine the following: (1) the number of course sections per term; (2) the number of different instructors of the course in each calendar system; (3) the number of lecture sessions; (4) the duration of lecture sessions; (5) the general and specific topics covered during each section of the course; (6) the total number of exams given per section per term; (7) the exam format; and (8) the textbook that was used. The section-specific grade cut-offs were also determined from data collected by the Biology Department.

The amount of instructional time spent on specific topics was estimated by examining the syllabus and the assigned textbook readings from each BIOL 1009 section. If a single topic was covered in one class session, it was assumed to be the focus of the entire class session (e.g., 50 minutes for daytime sections of the course during the quarter system). If two or more topics were listed for a given lecture session, the total number of minutes of the class was divided equally by the number of topics covered. For example, if meiosis and mitosis were covered during one class meeting, half of the class period was estimated as having been spent on each topic. Thus, the average estimated amount of time on each topic was calculated for each instructor/calendar combination. Section-specific averages were combined to generate overall averages for both the quarter and the semester systems. The amount of time devoted to each topic was compared between the quarter and semester systems using a student’s t-test.

**COMPARISONS OF STUDENT PERFORMANCE**

Grade distributions for each calendar system were compared separately using a chi-square test. Although instructors had the ability to select the specific grade cut-offs for their classes, the cut-offs were similar between the terms because the biology program encouraged internally consistent grade distributions.

Another measure of student performance was the mean final score students received in the course. Mean final course scores were obtained for 92 percent of the students who took BIOL 1009 between winter 1997 and fall 2001 (5,162 during the quarter system and 3,775 during the semester system). The maximum possible point total was 200 for all terms analyzed. A two-tailed Welch’s t-test was performed to determine whether the mean final score during the quarter system differed from that during the semester system.

As a third means of measuring student performance, student scores on exam questions that were asked in both the quarter and semester systems were analyzed. Exam question metadata (which included question I.D., question text, instructor, term, topic, difficulty score [DIFF], and the index of discrimination [DISC]) were obtained from the UMNTC Biology Program Exam Database. Only exam questions that were asked during both the quarter and semester systems were included in the analysis; each exam question category comprised several biology subtopics (Table 3, on page 17).

The exam question DIFF and DISC scores were used as a proxy for student performance. DIFF scores represent the percentage of students that answered the question correctly and so were used as a measure of student performance on a particular question; lower DIFF values indicate more difficult questions, whereas higher values indicate easier questions. DISC scores represent a question’s ability to differentiate between high- and low-performing students: Higher DISC values indicate questions that readily distinguish between high- and low-performing students while lower DISC values indicate questions that do not discriminate between these two groups.

There are different schools of thought about the best way to use the DISC score to analyze student performance. When the goal of a particular question is student mastery—i.e., all students are expected to get a particular item correct—the DISC values are irrelevant. Discrimination values are quite valuable, however, when the goal is to distinguish between high-performing and lower-performing students. Narrowing the intervals of DISC and DIFF can be useful for assessing student performance on questions that are deemed neither too hard nor too easy (Black 1999). In the biology program at UMNTC, desirable items have DISC scores above 0.2 and DIFF scores between 2.0 and 8.0 percent (items with these values
Questions deemed not too hard and not too easy have an approximate $\text{DIFF}$ value of 60 and $\text{DISC}$ values greater than 30 (Fall 2013). A $\text{DISC}$ value of 30 was selected as a cut-off point because questions with lower indexes of discrimination are poor at discriminating between high- and low-performing students either because the questions are poorly written, the topics were not covered sufficiently in class, or most students were able to provide the correct answer (Fall 2013). If $\text{DIFF}$ and $\text{DISC}$ values are not narrowed, the final analysis could include questions so difficult that even the best students fail to answer them and so easy that all students could answer them correctly.

Narrowing $\text{DIFF}$ and $\text{DISC}$ scores can help instructors better analyze and design exams, but the practice is not

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### Table 3.

<table>
<thead>
<tr>
<th>Topic Area</th>
<th>Specific Course Content Covered</th>
<th>System*</th>
<th>N**</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chemical and Physical Basis for Life (CAPB)</strong></td>
<td></td>
<td>Q</td>
<td>347</td>
</tr>
<tr>
<td></td>
<td>» Chemical composition of living things</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>» Biomolecules</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>» Chemical reactions and energetics</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>» Enzymes</td>
<td></td>
<td>S 321</td>
</tr>
<tr>
<td><strong>Cells Biology</strong></td>
<td></td>
<td>Q</td>
<td>256</td>
</tr>
<tr>
<td></td>
<td>» Prokaryotic and eukaryotic cells</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>» Viruses</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>» Mitosis and cell division</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>» Meiosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>» Membranes and transport processes</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Metabolism</strong></td>
<td></td>
<td>Q</td>
<td>181</td>
</tr>
<tr>
<td></td>
<td>» Aerobic catabolism</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>» Electron transport and anaerobic catabolism</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>» Photosynthesis</td>
<td></td>
<td>S 142</td>
</tr>
<tr>
<td></td>
<td>» Principles of inheritance</td>
<td></td>
<td>Q 600</td>
</tr>
<tr>
<td></td>
<td>» Chromosomes and recombination</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>» Molecular basis of inheritance</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>» Transcription</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>» Translation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>» Gene regulation prokaryotes and eukaryotes</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>» Recombinant DNA technology</td>
<td></td>
<td>S 511</td>
</tr>
<tr>
<td><strong>Ecology</strong></td>
<td></td>
<td>Q</td>
<td>168</td>
</tr>
<tr>
<td></td>
<td>» Distribution of organisms and communities</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>» Population biology</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>» Community interactions</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>» Ecosystems</td>
<td></td>
<td>S 187</td>
</tr>
<tr>
<td><strong>Evolution</strong></td>
<td></td>
<td>Q</td>
<td>323</td>
</tr>
<tr>
<td></td>
<td>» Evolutionary theory</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>» Mechanisms of evolution</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>» Speciation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>» Macroevolution and systematic</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>» Origin of Life</td>
<td></td>
<td>S 287</td>
</tr>
<tr>
<td><strong>Organismal Biology</strong></td>
<td></td>
<td>Q</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>» Development</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>» Life cycle</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>» Physiology</td>
<td></td>
<td>S 26</td>
</tr>
</tbody>
</table>

* Q=Quarter, S=Semester  
** N = number of records. One record refers to a single instance of a question being asked by a particular instructor in a given term.
without its caveats. For example, many instructors believe it is good practice to ask questions of a range of different difficulties in order to increase student confidence and better assess topics with which students are having difficulty. In addition, when DISC values are used, care must be taken to ensure that the observed discrimination relates to the difficulty of the question rather than unclear wording. Finally, DISC scores assume that a student’s ability to answer any particular question correlates with his or her ability to answer other questions on the exam; the compartmentalized nature of biology means that this will not always be true. In light of this information, the data set was analyzed in several distinct ways.

Differences between the quarter and semester systems were evaluated by separately analyzing overall differences and topic-specific differences for both DIFF and DISC scores. Five separate analyses were performed on the exam question data. For the first analysis, all exam questions asked in both the quarter and semester system between winter 1997 and fall 2001 were included, regardless of their DIFF or DISC scores.

The second and third analyses evaluated exam questions that had a DISC score greater than 30 and a DIFF score that fell within a specific range. The second analysis examined questions with DIFF values between 50 and 70 while the third analysis examined questions with DIFF scores between 55 and 65. These narrower ranges represented questions that more closely approach UMNTC’s ideal range of DISC and DIFF values (Fall 2013).

A subset of BIOL 1009 sections was taught in the evening by graduate students. These sections often followed a different class schedule than daytime courses. The graduate student instructors were quite skilled, though they were less experienced than the ranked faculty who typically taught the daytime sections. To determine whether either of these differences affected student performance, a fourth analysis removed exam questions asked in the evening sections by excluding all records for which the instructor was listed as “extension.” A fifth analysis included only ranked faculty members who taught during both the quarter and semester calendars.

For all of these analyses, differences were statistically evaluated with the Welch’s t-test using JMP software (SAS Institute 2012). Values of $p < 0.05$ were regarded as significant.

**RESULTS**

**Demographic Data**

Demographic data were analyzed to assess differences between the student populations during the quarter and semester systems. Gender (Figure 1A), ethnicity (Figure 1B), and academic level (Figure 1D) differences were significant ($p < 0.05$). The ratio of domestic versus international student status (Figure 1C) was not found to differ significantly. Because BIOL 1009 is strictly for non-biology majors, students within the study population were enrolled in a wide variety of majors (data not shown).

**Syllabus Comparison**

Between winter 1997 and fall 2001, BIOL 1009 was taught by ten instructors under the quarter system and eight instructors under the semester system (Table 4, on page 20). Four ranked faculty members taught in both the quarter and semester systems. The number of students per section varied: Instructors in the quarter system taught approximately 158 students in each section while instructors in the semester system taught approximately 189 students (16 percent more students) per section. The number of exams per instructor was constant under each system, as was the exam format (all were multiple choice). The final exam under the semester system included more questions than that under the quarter system (50 versus 40 questions).

The amount of time in class increased under the semester system, although the number of lecture periods was the same. Classes met three times weekly for 10 weeks under the quarter system and two times weekly for 15 weeks under the semester system (Table 4). Lectures during the daytime sections increased from 50 minutes under the quarter system to 75 minutes under the semester system; evening sections met for 75 minutes per class meeting under both systems, but the number of evening course meetings increased in the semester system. Overall, the switch resulted in a 38 percent increase in the average total time students spent in class (Table 4).

Potential differences between course structures were assessed by looking at the specific content covered in each section of the course under both the quarter and semester systems. The Campbell Biology 4th edition was used while the quarter calendar was in effect whereas the 5th
editions differed in some minor ways, but their overall content, major themes, and most figures were identical. The core content was similar in all sections of BIOL 1009. Although the total number of minutes spent on each topic increased when the semester calendar went into effect, the percentage of course time devoted to any given topic was similar under both systems (Table 5, on page 21). The two exceptions were for the metabolism and organismal biology topics: The percentage of classroom time spent on metabolism decreased by 2.2 percent under the semester system (p<0.0001) while the percentage spent on organismal biology increased by 4.3 percent (p<0.001).

**Student Performance**

Student performance was compared initially by examining final grade distributions and final mean scores. Students enrolled during the quarter calendar earned significantly more As and Bs and fewer Cs, Ds, and Fs (p<0.0001) than did students enrolled during the semester calendar (Figure 2, on page 21). Mean final scores were 146.7 ± 6.7 points under the quarter system and 142.7 ± 5.4 points under the semester system. This 2 percent difference was significant (p<0.02; Table 4).

Exam question analysis one revealed a 2 percent overall mean difference in DIFF scores between the two system formats (Table 6, on page 22). Overall mean DIFF scores were significantly higher (p<0.0001) and varied less under the quarter system than under the semester system. Overall mean DISC values did not differ significantly between systems (Table 7, on page 23).

Student performance on archived exam questions informed analysis of performance differences with regard to specific biology topics (Table 7). Although median values for DIFF scores by topic were similar between the quarter and semester calendars, the range and variance of the scores were usually higher during the semester calendar. Mean DIFF scores were significantly higher for the quarter calendar for the CAPB (p<0.02), cell biology (p<0.02), and metabolism (p<0.0001) topics. There were no significant differences in overall DISC scores by calendar or by topic, suggesting that the questions that were analyzed were able to distinguish equally well between high- and low-performing students regardless of calendar.

In examining DISC scores greater than 30 and DIFF values between 50 and 70, no significant differences were found in the overall scores by calendar type (data not shown). However, for individual topics—particularly ecol-
ogy—the mean DIFF scores were significant (p<0.02) by calendar type. The metabolism DISC score was also found to be significantly higher during the semester calendar (p<0.03, data not shown). Examination of the subset of data containing DISC scores greater than 30 and DIFF values between 55 and 65 revealed no significant differences in either the overall scores or the scores by topic (data not shown).

With one exception, removing data related to instructors listed as “Extension” produced the same results as for the initial data analyses; the ecology topic was no longer found to differ significantly by calendar type (data not shown). Because observed differences may have been a result of the teaching effectiveness of instructors who taught only during one calendar type, the fifth analysis used data related only to the four non-extension instructors who taught while both the quarter and semester calendars were in effect. Again, overall DIFF scores were significantly higher during the quarter calendar (p<0.005), but DISC scores did not differ significantly by calendar (data not shown). DIFF scores were also significantly higher during the quarter calendar for the “Cells” and “Metabolism” topics (p<0.05). (The results of all of these analyses are summarized in Table 8, on page 24.)
DISCUSSION

Analyses indicated that students perform slightly better in the quarter calendar than in the semester calendar. Comparisons of overall mean DIFF scores and mean final scores indicated that students performed approximately 2 percent better given the quarter calendar. This finding was supported by the grade distribution analysis, which indicated that students earned more As and Bs and fewer Fs under the quarter system. These results were surprising in that students performed (or appeared to perform) worse during the semester system even though they spent approximately 39 percent more time on each topic than did their peers under the quarter system. Analyses two and three, of questions of intermediate difficulty and good discriminating ability, did not indicate any overall differences in student performance. Taken together, these results indicate that students perform better with a quarter calendar in place and that the switch from the quarter to the semester calendar had a disproportionate effect on students’ performance on exam questions that were not good discriminators of that performance. One possible explanation for this is that the limited time associated with the quarter calendar improved students’ performance on questions designed to test their mastery (i.e., all students were expected to answer the questions correctly).

Table 5.
Estimated Amount of Time Spent on a Given Exam Topic per Term under the Quarter and Semester Systems

<table>
<thead>
<tr>
<th>Exam Topic</th>
<th>Estimated Average Time Spent per Topic per Term (Minutes)</th>
<th>p-value</th>
<th>Estimated Average Time Spent per Topic per Term (%)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Quarter</td>
<td>S.D.</td>
<td>Semester</td>
<td>S.D.</td>
</tr>
<tr>
<td>CAPB</td>
<td>263.5</td>
<td>45.4</td>
<td>348.8</td>
<td>44.0</td>
</tr>
<tr>
<td>Cells</td>
<td>251.0</td>
<td>40.7</td>
<td>331.9</td>
<td>33.6</td>
</tr>
<tr>
<td>Metabolism</td>
<td>150.0</td>
<td>29.5</td>
<td>161.3</td>
<td>27.5</td>
</tr>
<tr>
<td>Genetics</td>
<td>343.8</td>
<td>39.2</td>
<td>468.8</td>
<td>40.0</td>
</tr>
<tr>
<td>Ecology</td>
<td>185.4</td>
<td>75.8</td>
<td>251.2</td>
<td>39.3</td>
</tr>
<tr>
<td>Evolution</td>
<td>243.8</td>
<td>38.3</td>
<td>311.3</td>
<td>53.6</td>
</tr>
<tr>
<td>Organismal</td>
<td>81.8</td>
<td>57.1</td>
<td>140.6</td>
<td>80.6</td>
</tr>
</tbody>
</table>

Key: S.D. = Standard Deviation

FIGURE 2. Percentage of BIOL 1009 Students that Attained Each Letter Grade as Their Final Grade under Each System
In addition to revealing differences in overall student performance, the current study also revealed that students’ learning of specific biology topics was affected by the switch from the quarter to the semester calendar. Why would some topics elicit differences in student performance while others would not? There are three possible explanations: (1) The topics were taught or emphasized differently when each calendar system was in effect, (2) these topics were the most challenging, so students’ learning of them was most affected by the change in calendar, and (3) the differences reflected innate variation in student (and/or instructor) interest in these topics. Slight differences were found in the amount of time (<5 percent of class time) devoted to metabolism and organismal biology topics; low DIFF scores indicated that these topics were the most challenging for students. Differences in coverage and in the innate difficulty of certain topics may explain why student achievement related to these topics indicated the greatest degree of change from one calendar to the other, but they do not explain the differences observed for other course topics. Topic-specific performance gaps may have been caused by other student and instructor differences, including student interest and the amount of emphasis instructors placed on these topics.

Because student performance was examined for the period extending from 2.5 years before until 2.5 years after

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**Table 6.**

**DIFF and DISC Score Comparisons between the Quarter and Semester Systems**

<table>
<thead>
<tr>
<th>Value</th>
<th>Quarter</th>
<th></th>
<th>Semester</th>
<th></th>
<th></th>
<th></th>
<th>Mean Difference</th>
<th></th>
<th>95% C.I. of Mean Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>S.D.</td>
<td>95% C.I. of Mean</td>
<td>Mean</td>
<td>S.D.</td>
<td>95% C.I. of Mean</td>
<td>Lower</td>
<td>Upper</td>
<td>Lower</td>
</tr>
<tr>
<td>DIFF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lower</td>
<td>Upper</td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>68.55</td>
<td>13.12</td>
<td>67.96</td>
<td>69.15</td>
<td>66.53</td>
<td>14.24</td>
<td>65.85</td>
<td>67.20</td>
<td>-2.02</td>
</tr>
<tr>
<td>CAPB</td>
<td>67.56</td>
<td>13.44</td>
<td>66.15</td>
<td>68.98</td>
<td>65.05</td>
<td>14.37</td>
<td>63.47</td>
<td>66.62</td>
<td>-2.51</td>
</tr>
<tr>
<td>Cells</td>
<td>67.88</td>
<td>13.16</td>
<td>66.26</td>
<td>69.50</td>
<td>64.57</td>
<td>15.38</td>
<td>62.57</td>
<td>66.58</td>
<td>-3.31</td>
</tr>
<tr>
<td>Ecology</td>
<td>74.14</td>
<td>11.79</td>
<td>72.34</td>
<td>75.93</td>
<td>71.84</td>
<td>11.53</td>
<td>70.18</td>
<td>73.51</td>
<td>-2.30</td>
</tr>
<tr>
<td>Evolution</td>
<td>69.98</td>
<td>13.49</td>
<td>68.21</td>
<td>71.16</td>
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**Key:**

- S.D. = Standard Deviation
- C.I. = Confidence Interval
- Two-tailed Student’s t-test
Table 7.
DIFF and DISC Scores for the Eight Quarters Before the Switch to Semesters and Five Semesters After the Calendar Switch

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the calendar change from quarters to semesters, the two student populations were compared thoroughly in order to determine whether any differences between them were due to the change in the academic calendar or to other factors. Analyses of demographics and syllabi revealed that the course materials and the percentages of time on topic were similar while the quarter and the semester calendars were in place, but the student and instructor populations differed slightly. To some extent, student and instructor differences are expected in all longitudinal course studies because student populations and instructors change over time. For example, during the change from quarters to semesters, faculty implemented some innovative and creative solutions as they adapted their classes to the longer semester format (Phillips 2014); ultimately, these changes could have affected how—and how well—individual faculty taught. Differences in instructors’ experience, enthusiasm, and teaching style also could have affected the outcomes. Of the 13 instructors in the study, only four taught BIOL 1009 while the quarter and the semester calendars were in effect. When outcomes data for students in these four instructors’ classes were analyzed separately, it was apparent that DIFF scores were still significantly higher during the quarter than the semester system; the

<table>
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<th>Number of Records Analyzed*</th>
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<th>DISC</th>
<th>DIFF</th>
<th>Significant Results</th>
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<td>Yes</td>
<td>All</td>
<td>All</td>
<td>▶ Overall mean DIFF scores were significantly higher (p-value &lt; 0.0001) in the quarter system. ▶ Mean DIFF scores were higher in the quarter system for topics CAPB (p-value &lt; 0.01), Cells (p-value &lt; 0.01), Ecology (p-value &lt; 0.04) and Metabolism (p-value &lt; 0.0001)</td>
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<td>2</td>
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<td>&gt;30</td>
<td>50-70</td>
<td>▶ Mean DIFF score for Ecology was higher in the quarter system (p-value &lt; 0.02). ▶ Mean DISC score for Metabolism was higher in the semester system (p-value &lt; 0.03)</td>
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<tr>
<td>3</td>
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<td>4</td>
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<td>Any</td>
<td>▶ Same results as Analysis #1 above, except Ecology was no longer significant</td>
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<tr>
<td>5</td>
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<td>Any</td>
<td>Any</td>
<td>▶ This analysis only includes faculty who taught in both curricular systems. Overall mean DIFF scores were significantly higher (p-value &lt; 0.005) in the quarter system. ▶ Mean DIFF scores were higher in the quarter system for topics Cells (p-value &lt; 0.05), and Metabolism (p-value &lt; 0.05) ▶ Mean DISC score for Evolution was higher in the semester system (p-value &lt; 0.02).</td>
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</tbody>
</table>

* Total number of records over all topics for the indicated Quarter or Semester system. One record refers to a single instance of a question being asked by a particular instructor in a given term.
implication is that differences between faculty members do not play a large role in student performance by calendar type. Gender ratios and ethnicity differed significantly by calendar type; they were of comparable magnitude to the differences in observed student performance, suggesting that changes in the student population may account at least in part for changes in student performance.

Students may perform better on exams under the quarter system if (1) the format of the exams differed between systems or (2) if faculty graded less strictly in the quarter system (Mertes 1969). The current study addressed these possibilities in three ways: First, it determined that exams were of a consistent format and of comparable length regardless of calendar; second, all questions used in the analysis of student performance were included on exams administered during the quarter as well as the semester system; third, the multiple-choice format ensured that instructors did not grade more strictly in one system than in the other. These controls helped ensure that exam format and instructor grading bias did not affect the results of this study.

Students may fare worse during the semester system for any of several reasons. First, the additional time in the semester system (as compared to the quarter system) could have increased student procrastination (Van Der Hulst & Jansen 2002). An estimated 80 to 95 percent of college students procrastinate, a habit that has been shown to decrease performance (Steel 2007). Students procrastinate less as deadlines approach (Schouwenburg & Groenewoud 2001, Strongman & Burt 2000), suggesting that one simple solution is to have more frequent deadlines. Institutions with a semester calendar may benefit from requiring students to participate in goal setting and to take periodic quizzes; both techniques have been shown to decrease procrastination (Tuckman 2014, Wesp 1986). Second, the 39 percent increase in class time spent in the semester system means that students likely were exposed to more information than were their peers who had taken the course while the quarter calendar was in place. Even though the students were being tested on the same topics, it is likely that they were being asked to remember more during the semester system, and this could have contributed to their poorer performance on exams. Third, the semester calendar also has the potential for an increased lapse of time between when a topic was covered in class and when the assessment (specifically, the exam) was given; students may perform worse in the semester system simply because they have to remember information for a longer period of time before they are tested on it. This may result in apparent decreases in student performance, but it may be better for student learning because it has the potential to better test students’ long-term retention.

Overall, the results of the current research do not suggest that either calendar offers any substantial advantage over the other in terms of student performance. The results are consistent with previous studies that suggest that students perform slightly better in quarter than in semester systems (Coleman, Bolte & Franklin 1984, Jansen 1993, Mertes 1969); nevertheless, the magnitude of the observed differences in student performance was small. This overall difference in student performance was not evident in the subsequent analyses that examined smaller subsets of the exam questions that were of intermediate difficulty. Some of the differences could have resulted from student or instructional staff differences between these two systems. Because students in the current study were enrolled in a wide variety of majors, the study’s results are likely generalizable to other academic disciplines beyond the field of biology. The quarter calendar may offer a slight advantage over the semester calendar, but any institution considering changing from quarters to semesters should consider how relatively small changes in student performance weigh against other potential administrative, logistical, and faculty benefits associated with the semester calendar.

REFERENCES
Fall, B. 2013, Personal communication.


About the Authors

**BRIAN GIBBENS** is a teaching assistant professor at the University of Minnesota. He specializes in molecular and cellular biology and is currently teaching the Foundations of Biology courses for biology majors. His primary research interests include student motivation, critical and creative thinking, curricular systems, digital biology, metagenomics, scientific teaching, classroom-based authentic research experiences, team-based collaborative learning, and active learning classrooms (ALCs). He was named a National Academies Education Mentor in the Life Sciences in 2012 and received the College of Biological Sciences’ Most Creative Teaching Style award in 2015.

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Managing how people come to work, do their work, and leave work was defined by 1870, perfected by 1930, and has changed little since (Kugelmass 1995). However, during the last several decades, enhancements to technology, changes in the economy, and shifting views of societal roles has led to the notion of teleworking. Teleworking refers to work that is conducted away from the usual place of business but mostly at home and that is often supported by telecommunications, Internet access, or a computer (Nilles 1998). It emerged, or evolved, as employees started placing an emphasis on “quality of life” issues, and employers faced with hiring and retaining the best talent were forced to offer alternative work solutions—or risk losing their best workers (Zbar 2002).

With the increase in popularity of teleworking within the workplace, it is important to fully understand this change over time, with noting the implications of these policies in the workforce. For the right people, telecommuting works (Markarian 2007); but who are the right people? What do both employees and employers need to know regarding the concept of teleworking, the pros and cons, as well as implications for the work environment? These, and other questions, will be addressed as teleworking is explored in greater detail.

**HISTORICAL REVIEW OF TELEWORKING**

The concept of teleworking first emerged in the 1970s, but quickly gained popularity in the 1980s in response to energy crises, transportation issues, and environmental concerns (Markarian 2007). In fact, 1974 is considered a defining moment for teleworking when Jack Nilles, who has studied and promoted teleworking since the 1970s, was stuck on the highway, attempting to get to work, and glanced at the traffic advisory sign that stated, “maintain your speed.” Jack’s speed at the time was zero (Hequet 1994). As stated by Jack, “the clock was ticking for me to get to work on time. I was convinced that teleworking had a future” (Nilles 1998).

In 1990, teleworking became popular as a response to the federal government’s launch of the Clean Air Act. Un-
der the law, employers with more than 100 workers at a site were required to reduce employee trips to work in the most polluted cities (Hequet 1994). As a response, major cities provided opportunities to employees to telework in an effort to reduce pollution. In 2001, another spike in teleworking occurred, in response to the terrorist attacks to New York City, Washington D.C., and Pennsylvania. After September 11, millions of square feet of Lower Manhattan office space was destroyed or rendered unusable, leaving companies and their workers to find an alternative workplace. Home, for many, became—and remains—the answer (Zbar 2002).

Now, in the new millennium, the workforce is facing another spike in the popularity of teleworking. With the advancements of technology, a shift has taken place from the established work week to that of flexibility of time, duration, and location of work. Koehler, Philippe, and Pereira (2013) articulate that largely due to the advancement of technology, new organizational structures have emerged and have brought about a transformation in the workplace. Technological advances have created the opportunity to expand our ability to work together without being confined and new infrastructures have made it possible to transcend distance, time zones, and traditional work environments (Bailyn 1998; Harrington and Ruppel 1999 as cited in Koehler et al. 2013).

Technology is not the only cause leading to the shift of teleworking in the workplace. In fact, societal and economic changes have also impacted the workplace. This is supported by Matos and Galinsky (2010), who state the American workforce has had a number of major transitions throughout history, when societal, economic, and technological trends transformed work, workers and workplaces. This point is further supported by Boyett and Conn (1992), who predict that a future in which technology, global competition, and consumer demands will increasingly require more flexible, creative, and team-oriented workplaces (as cited in Dalton 2003). Virtual teams, a group of people working on tasks towards a shared objective where the work does not occur at the same place or time, will become more common as institutions of higher education continue to focus on globalization.

Institutions of higher education are considered to be a large provider of the workforce within the United States. As teleworking continues to grow in popularity, it seems inevitable that institutions of higher education will be faced with the concept of teleworking. In order for managers to create best policies and practices, it is important to understand what has impacted teleworking and how the concept has changed over time.

**CHANGE OVER TIME**

**Technology**

Anyone who works in higher education would have to admit that one of the most important, if not the most important, aspects of their changing experiences with others has been technology (Komives and Woodward, Jr. 2003). In higher education, the evolution of technology has changed the current classroom and office environment. With technology, the work environment can be completed by remote access; or by teleworking.

In 2000, for example, roughly one-third of us now had computers in the home. By 2002, nearly two thirds of wage and salaried workers used computers for their daily job (Gershuny 2000; Bond et al. 2002). As computer use has increased within higher education, so too have the applications available for virtual communications, leading to increased information sharing. Technologies such as e-mail, videoconferencing, teleconferencing, discussion groups, chat rooms, project management software, collaborative design tools, knowledge management systems, and message boards are all available on college campuses. Services such as Skype, Google Hangouts, GoToMeetings, WebEx, Accu Conference, and InterCall all provide communication services for little or no charge.

More documents are available and stored online, creating an environment of digital file sharing and eliminating the use of paper and the physical storage of files. Applications such as Dropbox, Google Drive, BaseCamp, Linux, and Box all offer secure file sharing, making it easier for employees to access work related material from a remote location. In fact, more than a third of employees sometimes use a computer at home for job-related work, and nearly one fifth use a computer at home to read and send job-related email (Bond et al. 2002). As a result, the workplace environment has changed. Now, employees can complete work related functions outside of the work environment.

In addition to ease in the workspace, the evolution of technology has also created an environment of remote ac-
cess, also known as, online or distance education. Online courses (distance education) have eliminated the requirement of physically being in a classroom, on a college campus to either teach or learn.

Distance education has grown by leaps and bounds since the first online university was accredited in 1991, growing at an average annual rate of 40 percent through 2002 with estimates that by 2008, one in ten college students will be enrolled in an online degree program (Kaufman 2013).

Faculty members are no longer bound to the physical environment of their campus to teach.

In addition, the instruction mode of classes has also changed with enhanced technology. With virtual classrooms, enrollment size and instruction methods are limitless. As a supplement to face-to-face campus instruction, interactive online media allows instructors to accommodate a wider range of learning styles. Technology has also reduced time limitations in which a class is offered. Online classes can take place live or be offered prerecorded. Virtual learning has added new diversity to when, where, and how we learn (Kaufman 2013).

With changes to technology, and the creation of distance education, faculty and staff members at institutions of higher education have greater flexibility in the workplace. The enhancements of technology throughout the twenty-first century have led to a shift in higher education, where workplace teleworking is possible. No longer must faculty members travel to the campus to teach a class, or staff members need to work in a particular campus building during scheduled hours.

Changes in technology have also benefited students attending institutions of higher education. Distance education students need to have access to the same services, educational programming, and interaction with student affairs staff as on-campus students, but the traditional idea of office hours does not apply at a distance (Barratt 2005). Changes to technology has led to a collegiate environment where students are able to access services twenty four hours a day; no longer relying on staff being present to answer questions or address concerns.

In higher education, teleworking provides benefits to faculty and staff. As summarized by Gose (2013), “with technology changing every day, it’s nice that our institution realizes that we need to continually be adapting what we do to remain relevant to the students.”

Economics

While the financial fortunes of American colleges and universities vary greatly by institution, generally speaking, institutions of higher education are challenged in providing the same level of service to students with less financial support. The economic state of the twenty-first century has negatively impacted institutions of higher education and modifications to the operations of institutions of higher education have been created.

Over the last 30 years, institutions of higher education have taken several measures to increase output while attempting to decrease spending. Commenting on the changes that took place in higher education, Noble (2003) states that:

University resources were reallocated towards research. In addition, class sizes swelled, teaching staffs and instructional resources were reduced, salaries were frozen, and curricular offerings were cut to the bone. At the same time, tuition soared to subsidize the creation and maintenance of the commercial infrastructure.

Institutions of higher education explored opportunities to ‘do more with less’, and in many instances, burdened students with increases in tuition and fees.

Teleworking has provided institutions of higher education the opportunity to reduce spending while maintaining academic and social services to students. In fact, teleworking (work place flexibility) has been recommended by the United States as an effort to reduce costs. President Obama has been weighing in regularly on the value of flexible workplace arrangements, not only to manage work and family but also to cut costs (Business Management Daily 2010). Under his administration, recommendations on flexibility in the workplace have been made, including flexible schedules and part-time work (Nuter 2011).

Recommendations from the government have been utilized by institutions of higher education as a way to deal with economic demands. While many institutions of higher education are still operating under salary freezes, furloughs, and stalled merit, teleworking aides in the retention, attraction, and job satisfaction of faculty and staff. Teleworking is being used to attract, retain, and motivate talented employees. For employers, flexibility can mean higher retention, better employee morale, and even a
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healthier workforce that suffers from less stress (Business Management Daily 2010; Nuter 2011). This may lead to reduced costs towards health care, recruitment, and training.

Teleworking provides savings to both employer and employee. With fewer employees in the office, employers can cut down on office expenses. Teleworking reduces the employer’s overhead expenses such as electricity, water, paper waste, heating and cooling, and office space. In 1999, IBM reported savings of $75 million, in 2003 AT&T reported savings of $34 million and in 2004, Nortel reported savings of $22 million, from introducing teleworking (Verbeke, Schulz, Greidanus, and Hambley 2008).

In addition, productivity studies consistently find that teleworkers outperform their peers at the traditional office by about 16 percent (Herquet 1994). Increased productivity can translate into substantial financial gains for organizations. Teleworkers are more productive as they have reduced distractions, reduced commuting times and problems, reduced environmental disruptions, such as severe weather storms, as compared to their peers (Denbigh 2003).

For employees, the ability to work remotely or work a modified work schedule decreases the weekly commute time while saving the employee gas money spent to travel to and from work. By teleworking one day a week, the average commuter could save an estimated $2,104 per year (Markarian 2007). These savings are a combination of gasoline, car repair, tolls, or parking fees. Additional savings include decreased food costs, dry-cleaning costs, and clothing costs (Verbeke et al. 2008).

Providing teleworking allows faculty and staff to work in a way that supports their economic needs and also reduces costs for institutions of higher education. Faculty members may now work for more than one institution; serving as adjuncts and teaching education online, in order to make ends meet. Staff members may seek other sources of income or find ways to reduce spending. As institutions of higher education continue to face economic challenges in the twenty-first century, teleworking provides both employees and employers with opportunities for reducing spending and increased savings.

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STRATEGIC ENROLLMENT = ADMISSIONS = INTERNATIONAL ED = LEGAL = NEW TECHNOLOGIES = RECRUITMENT = AND MORE...
Social Structures
Throughout the twenty-first century, family structures and gender roles have shifted, leading to the possibility of teleworking. The family structure has changed in such a way that flexibility is needed in order to meet work and family demands. The percentage of couples with both members employed outside the home has risen from 66 percent in 1977 to 80 percent in 2008 (Matos and Galinsky 2010).

In addition, over the past twenty-five years, women have achieved increasingly higher educational levels and steadily moved into managerial and professional occupations—such that today women employees are significantly better educated and significantly more likely to hold managerial and professional positions than men. In 1950, for example, 34 percent of women ages sixteen and older participated in the labor force; in 2010, this figure rose to 50 percent for women overall and 71 percent for women with children. The traditional family model of the male as the breadwinner and the female as the homemaker has rapidly become a remnant of a society past (Black 2002; Bond et al. 2002; Matos and Galinsky 2010). These changes to gender roles have led to the increase of teleworking within higher education.

Not only had the increase of dual-employed couples over time led to an increase in teleworking, but so has the need to account for child care and elder care. In fact, in the twenty-first century, about one in ten workers, ages 30 to 60, are responsible for caring for both aging parents and children; these individuals are being called the “sandwich generation” (Schaefer 2007). In an effort to maintain work-life balance, employees might appreciate sabbaticals and leaves of absence as they become grandparents or struggle to care for their own aging parents (Business Management Daily 2010). The flexibility of the work schedule or opportunity to telework provides employees with time needed to care for both family needs and work-related tasks. As the family structure continues to evolve, teleworking in higher education provides opportunities for faculty and staff to meet the demands of both work and home. Employees expect an increasing level of flexibility from employers so they can better meet the demands of their work and personal lives (McNall, Masuda, and Nicklin 2010).

THE PROBLEM WITH TELEWORKING
The technological, economic, and societal changes throughout the twenty-first century have created an environment in higher education where teleworking is available to both faculty and staff. Most employers are aware of telecommuting as an alternative work arrangement; 57 percent offer telecommuting as an alternative work option for their employees. A 2014 survey conducted by the recruiting firm Robert Half International on 1,777 Human Resource Directors in thirteen countries estimated that 79 percent of companies allow staff to telecommute as part of their talent attraction and retention initiatives (Koh, Allen, and Zafar 2014; Stone 2013). In 1987, an estimated 60 percent of the U.S. workforce was not accommodating to teleworking; this percent decreased to 50 percent in 1993 (Nilles 1998).

However, while the availability of teleworking has increased over time, the use of it amongst employees has not. A longitudinal study of flextime showed a steady increase in corporate and government programs, ranging in growth from 15 percent to 29 percent from 1977 to 1985. Yet employees actually participating in flextime programs have remained relatively constant at 12 percent between 1986 and 1990. In addition, in 1994 it was found that teleworkers with formal arrangements amounted to only 1.6 percent of U.S. workers (Hequet 1994; Kugelmass 1995).

The lack of utilization of teleworking policies is a direct result of implementation. The fact that an organization has flexibility policies is not by itself sufficient to enhance the utilization of the policies at the institution. In order for teleworking to be utilized, it is critical to have clear procedures on how applications for teleworking are evaluated (Jaoko 2012; Koh et al. 2014). In some places of employment, the approval process is left to the discretion of the individual supervisor. While organizations may have made the option of teleworking available, employees are not able to telework as their supervisor does not approve the arrangement (Jaoko 2012; Kugelmass 2005; Koh et al. 2014).

In other places of employment, certain positions cannot be completed through teleworking. Administrative assistants, campus police, and maintenance staff are some examples of positions that may not be completed by teleworking. Implementation and management of workplace flexibility requires supervisors to take responsibility for its utilization. This leads to inconsistency amongst employees on whom, when, and how teleworking can, if at all, take place. It is evident that teleworking will continue to gain in popularity within higher education. As managers...
begin to explore potential policy implementation, it is important for managers to be aware of the impact teleworking may have on a supervisory relationship. Specifically, communication, management, and trust are impacted by teleworking. Managers should be aware of these impacts in order to implement a successful teleworking policy.

**COMMUNICATION**

Within a traditional office environment, communication can take place in a variety of ways; one of which includes face to face communication. However, in a telework environment, the opportunity for direct face to face communication is removed. The creation of teleworking will impact how employees communicate. In the virtual work environment, messages are often limited to writing and speech, and the channels are electronically mediated through the use of information technology (Dalhstrom 2013). Some examples include texting, instant messaging, emailing, or group chat. Proper communication is essential for successful teleworking. Employers may want to incorporate video conferencing, for example, as a method of communication.

In fact, when outlining steps in building a proper teleworking environment, Hequet (1994) recommends that supervisors and employees take time to outline how communication will take place during teleworking, specifically by indicating that supervisors and workers need to decide at the beginning how much communication they will have to do and by what means. Telecommuting changes patterns of communication and complicates social and task dynamics (Thatcher and Zhu 2006, as cited by Dalhstrom 2013). It may also affect an employee's communication of his or her work-related identity, or self-view, as teleworkers may feel isolated from the elements of the main office. Supervisors may need to employ other methods to illustrate positive feedback to employees that telework and to maintain the human element of communication. Overall, virtual communication is key for successful teleworking.

**MANAGEMENT**

Teleworking also effects how employees are managed. When studying teleworking, several researchers cite that many teleworkers report that there is an attitude with co-workers and bosses that, “if they can’t see you, you aren’t working” (Abdel-Wahab 2007, as cited in Dalhstrom 2013; Zbar 2002). These results imply that supervisors are not equipped to manage someone who is not physically present. Supervising out-of-sight employees requires managers to rely on measures other than physical observation to monitor performance. Managers need to obtain the skillset needed to supervisor a virtual worker; to understand that while a staff member is not in the office, they are working.

When surveying supervisors regarding teleworkers, Hequet (1994) found that many managers asked, “How can I manage someone I can't see?” In an environment where employees are working remotely, supervisors need to be able to manage employees who are not present in the workplace. Managers may also claim that if employees aren’t working in the same place, they aren’t working together; that teleworking stifles teambuilding and collaboration. Yet, the reality is that plenty of work teams are not co-located, yet they share common goals, common objectives, and jointly contribute to results, such as sales organizations (Gray, Hodson, and Gordon 1993).

Proper management of teleworkers requires supervisors to be more ‘hands-on’ and involved in the employees’ day to day operations. Managing teleworkers means knowing every direct report’s job and with whom each communicates. Managers must set guidelines and milestones for remote workers, specifying what has to happen by when. Common objectives and goals that are clearly and consistently shared aids managers in the accountability of teleworkers’ tasks. Supervisors must have clear guidelines for when and how tasks are going to be completed. Teleworking affects the world of practice in how supervisors manage their team members. In order to have successful teleworking, supervisors must be more intentional with the management of their staff.

**TRUST**

Teleworking may also impact trust within higher education. First, supervisors must trust that an employee who is teleworking is completing the required work. In assessing suitable candidates for teleworking, Denbigh (2003) articulates that employees should be self-disciplined, have strong communication skills, are able to work independently, are trustworthy, have a mature attitude, are committed to the company, and are productive when in the main office. Second, the employee must trust that the supervisor
will be clear in expectations while teleworking. In order to build a culture of trust in the organization, employees must be empowered and supported, and the organization must be there, committed to their employees (Chapdelaine 1998 as cited by Koehler et al. 2013). Without trust, workplace environments may become negative. In studying trust, Hurley (2012) found that low trust environments were associated with stressful, threatening, careful, divisive, unproductive, secretive, and competitive environments. This was further emphasized by Koehler et al. (2013) by stating that with low levels of employee trust, performance outcomes may have adverse effects on the organization.

Teleworking may impact the trust level at the workplace; in addition, trust is imperative for successful teleworking. When being interviewed on supervising teleworkers, Chubb Macks stated that, “If you’re a manager, why don’t you want people working at home? Don’t you trust them? If you don’t, there’s a bigger problem than just telecommuting” (Hequet 1994). A manager’s trust has a broad impact on employees’ reactions to home based teleworking. Employees may turn to supervisors for support while teleworking; in which case, trust is an important part of success. It is important for a manager to establish trust when creating an environment for teleworking.

**CONCLUSION**

In conclusion, changes to technology, the economy, and society throughout the 21st century has led to a change in higher education where workers no longer need to travel to the work environment to complete tasks. Institutions of higher education have evolved, or shifted, as a result of societal influences. The American college system has evolved into a provider of rich, relevant training for all adults. Diversity in the curriculum, the study body, and teaching methods has transformed higher education into a flexible source for students at any stage of life (Kaufman 2013). As a result, employees are now able to telework, providing benefits to both the employee and employer. In higher education, faculty, staff, and students benefit from teleworking.

Although the change in time has led to greater availability of teleworking, including increased policies, many employees are not on formal teleworking agreements. Teleworking is an increasingly popular organizational dynamic that presents unique challenges for workers, managers, and human resources departments (Dalhstrom 2013). Supervisor approval and implementation is one such challenge. Regardless of use, teleworking effects the environment of higher education due to changes in communication, management, and trust. As teleworking continues to increase in popularity, further research on the topic is needed to address remaining issues and provide clarity for future practice within higher education.

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About the Author

KRISTIN ALBRIGHT WATERS is the Associate Director of Operations for Undergraduate Admissions at University of Maryland, Baltimore County (UMBC). She is a second year student in the Doctor of Education (EdD), Educational Leadership program at Frostburg State University. Kristin intends to focus her dissertation on the topic of teleworking in higher education.
Finding Middle Ground: Expectations of and Enrollment Strategies for Millennial Students

By Monique Perry

Confident. Digital natives. Sheltered. Achievement oriented. Overscheduled. Optimistic. These are a few of the many adjectives used to describe Millennials. According to the U.S. Census, Millennials—individuals born between 1977 and 1994—have begun to replace Baby Boomers—those born between 1946 and 1964—as the dominant generation in the workplace. However, the volume of Millennials is not exclusive to the world of work; it is also commonplace in higher education at both the university and community college levels. The U.S. Department of Education reports that between 2001 and 2011, the number of 18- to 24-year-olds increased 11 percent—from 28 million to 31.1 million; the percentage of 18- to 24-year-olds enrolled in college increased from 36 percent in 2001 to 42 percent in 2011 (NCES 2013).

This translates into a significant paradigm shift in expectations and strategic enrollment management approaches that may seem contradictory to the numerous student development theories and rites of passage that the college experience is designed to initiate. Whether they are being recruited to a two- or a four-year institution, Millennials require (and, more important, expect) more TLC as they proceed through the enrollment funnel. Although all Millennials are not the same, enrollment officers and professionals must be cognizant of certain characteristics, some of which may cause them to wonder, “Who are these people?”

- Millennials have a consumer mindset. Many in academia view a college education as an intangible and priceless gift that gives forever, yet Millennials often view it in the same way they do a purchase on iTunes or Amazon: Whether it is 10 a.m. or 2 a.m., they want to be able to find information, ask questions, and receive updates in real time. This sense of immediacy governs their requests for information and services. Even though an institution’s website may clearly indicate decision dates for admission, Millennials may call frequently to check the status of their applications. Similarly, transfer students may expect to be able to track their transcript evaluations for credit in real time in the same way they would track a package they ordered. Prospective students are also likely to expect their financial aid to be awarded and packaged within 24 hours of submitting their FAFSA. Millennials perceive higher education as a service and so expect similar types of timing and access to information as they do from retailers.

- For Millennials, reading is fundamental—but optional—as it pertains to the enrollment process. Colleges and universities publish numerous important guides, forms, and policies that in some cases are even
required. However, Millennials may not take the time to read forms they must sign, even if that form is a Master Promissory Note (MPN) for a federal loan or grant. I have personally witnessed students’ signing forms in person or on line on which they deny acknowledgment or receipt of any information about the document at a later date. Unfortunately, this is conventional behavior for this group, and it can be problematic—particularly when matters of financial aid, admission/enrollment deadlines, and orientation are involved. Students sometimes miss important deadlines and adversely affect the start or even the overall effectiveness of their education. A recent study highlights the importance of timing in the completion of pre-enrollment activities and finds that earlier completion of college business sets students on a pathway toward success as they transition toward full immersion in their academic studies (D’Amico, Morgan & Rutherford 2011). (This is often the point at which an institution recognizes that it has enrolled not only the student but the family as well.)

**He or she who pays the bills calls the shots.** One of the primary characteristics of the Millennial generation is a close relationship with their parents. They work closely with their parents on all decisions. Often, parents of Millennials have earned some postsecondary credential that informs their expectations of their children’s college experience. Thus, even parents of Millennials expect instant and ongoing involvement in all stages of their children’s matriculation, from admission to alumni. In theory, parental involvement is an asset, but for many enrollment management professionals, it can become problematic.

For example, the parent of a Millennial will likely bristle at being told that because of FERPA, a staff member cannot reveal information about a student record; some may even perceive enforcement of FERPA as poor customer service. Millennials often are referred to as the most overscheduled adolescent generation because of their involvement in sports, dance, music and other activities to the extent that they have no free time. Their parents are accustomed to managing all of their children’s activities and tend to feel challenged when their children enter college. The parents of some Millennials may want to contact faculty to follow up on their children’s absence from class or their bad grades and may fail to fully comprehend their children’s accountability for their success. Calling faculty members to schedule a conference is no longer an option. Parents can no longer advocate for academic exceptions in the same way they may have when their children were in secondary school.

**SO WHAT’S NEXT? PRAGMATIC STRATEGIES TO ADDRESS MILLENNIAL EXPECTATIONS**

Given these characteristics of Millennials, what are colleges and universities to do? It is important to recognize the impact of going to college on students’ development toward adulthood. However, it is equally important to keep in mind tactics that can define the middle ground between that development and institutional expectations.

- **Provide one-stop access and information for enrollment processes.** “One-stop shops” reflect a consumer mindset and are becoming increasingly common. Millennials (in fact, most students) do not care about reporting structures and departments. They just want the departments that are related to the enrollment process to be located in proximity to one another (and, ideally, to be under the same roof). Such a service structure should be strongly considered. For most students—especially first-generation and community college students—access to resources and people is critical. Having to trek across campus from the admissions to the financial aid office could deter enrollment. The one-stop structure also enables students to complete most business in one visit. Another practical tactic is instant admission or instant registration days. The more progress students feel they can make when they visit campus, the more motivated they will be to continue the process to completion. Given the multitude of institutional and federal processes and regulations, enrollment can feel like a series of barriers. Removing institutional barriers should be a constant focus for the sake of meeting not only Millennials’ expectations but those of all students.

- **Influence the influencers.** Many parents of Millennials want to be involved in their children’s college enrollment. Establishing and maintaining a separate and highly focused parent outreach effort and communication flow can help an institution influence this important group. Consider offering an option for parents as well as students to receive e-mail communications...
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from the institution, perhaps pertaining to payment deadlines and registration information. During orientation, be certain to offer a separate parent session or, at a minimum, dedicated time with parents of incoming students. Answering their questions will help them feel connected to the enrollment process. This can prove advantageous as parents often will apply the positive pressure their students need to complete the enrollment process and, eventually, college. Among the promising practices shared at the recent AACRAO Symposium was a “Beyond Orientation” webinar for parents to view after new student orientation to help them stay connected and to prepare them to support their students’ success (AACRAO 2014). It can also serve to maintain parents’ interest and students’ momentum after orientation, especially if the student is considering enrolling at another institution or foregoing college altogether in favor of entering the workforce.

The necessary evil: social media and technology Because Millennials are digital natives, they expect technology to be available and to work all the time. A college can leverage this expectation by ensuring that its website is interactive, responsive, and messaged in a way that prospective students will understand. There is a growing trend for admissions and financial aid offices to create and maintain their own social media pages to ensure that critical messages and deadlines are communicated to prospective students and their families. From an academic sales and marketing standpoint, promotion of an institution’s integration with technology—including in the classroom and hands-on lab environments—is attractive to Millennials and their families.

Like our colleagues on the academic side of the house, enrollment professionals must remain attuned to the student market. As generational characteristics shift, it is imperative that we evaluate our enrollment strategies to ensure that we are meeting the needs of all of our students—especially Millennials. Keeping this group and its expectations clearly in focus is a smart strategy for success.

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AACRAO. See American Association of Collegiate Registrars and Admissions Officers.

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College Admission: Now and Then Again

By Stephen J. Handel

I left college admissions at the University of California (UC) a decade ago. Today, I am back at UC, two doors down from my former office. Although some things remain unaltered (the University still has nine undergraduate campuses and annually receives more applications—600,000—than the populations of most medium-sized cities in the Midwest), the world of college admissions has changed significantly. My current disorientation has left me rubbing my eyes. Channeling a higher education version of Rip Van Winkle, I offer the following ten observations:

1. The electronic application has come of age. In 2004, online applications were starting to be utilized, accompanied with cheerful guarantees of more accurate responses and easier reporting. Today, nearly every college in America has an online application. As of this writing, UC’s online application is running flawlessly (although no one here is smug given recent troubles at the Common Application). Granted, some of the enthusiastic predictions about the efficiency of electronic applications have been met: Applicants do make fewer errors. Yet prospective students procrastinate far more than in years past: For the UC system, half of all applications arrived within two days of the deadline.

2. Comprehensive review goes public. According to the annual “State of College Admission” report by the National Association of College Admission Counseling (2014), grades in college-prep courses, rigor of the curriculum, and admissions tests scores remain the most important measures of merit for freshman admission—as true today as a decade ago. The difference now is that many selective, public institutions are developing admissions processes that place additional emphasis on other information in an applicant’s file—something that elite, private institutions have been doing for years. This process, commonly referred to as “comprehensive review,” is time consuming. Still, from my newish vantage point, it is a worthy commitment of time and resources, demonstrating the value we place on applicants as something more than the sum of their grades and standardized test scores.

3. It’s hip to go to community college. Although community colleges have existed for more than a hundred years, their success in preparing students for transfer has earned greater regard from four-year institutions, whose pipeline of high school graduates has begun to run dry. The fall-out from the latest recession has also made middle- and upper-class families keenly aware of college costs, with the result that their children have begun to enroll at community colleges as lower-cost alternatives to four-year institutions. Of course, that is
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precisely the mission for which these remarkable institutions were created in the first place.

- Politics are still local. According to the Institute for International Education, the number of international applicants to U.S. colleges and universities has increased by a third since 2004, fueled partly by rising economies abroad and a sustained awareness of the reputation of U.S. higher education institutions. The increasing international diversity of our undergraduates is a wonderful addition to our campuses, yet I am mindful that public institutions like UC ignore at their peril the needs of local constituents.

- The Supreme Court goes to college. Who could have predicted the high court’s relentless interest in college admissions over the past decade? In 2003, the Supreme Court narrowly upheld the consideration of applicants’ race and ethnicity by the University of Michigan’s Law School. In Grutter v. Bollinger, Justice Sandra Day O’Connor famously opined that such practices should be unneeded in 25 years. A mere six years later, however, the Court heard oral arguments in Fischer v. University of Texas, which, while not overturning the earlier decision, nevertheless tightened the conditions under which a college or university may use affirmative action in admissions. And the Court is not finished: Last year, it voted 6–2 that Michigan voters’ ban on affirmative action can stand.

- The selective get more selective. Although the vast majority of U.S. colleges and universities admit most of the students who apply to them, the greatest media buzz always surrounds the most selective institutions and whom they did not admit. The New York Times recently reported that universities such as Harvard and Stanford admit fewer than one in ten freshman applicants (Perez-Pena 2014). None of my admissions colleagues takes any satisfaction in turning away so many hard-working and talented applicants. Yet the relentless focus on college selectivity threatens to become a perverse standard of quality.

- Predicting the future remains unpredictable. As top-tier colleges have become pickier about whom they will admit, students have begun applying to more institutions. According to NACAC (2014), 32 percent of all applicants apply to seven or more colleges, up from 16 percent a decade ago—and the remainder apply to at least three institutions. This is wreaking havoc with the statistical models that admissions officers have traditionally used to predict who will accept their offers of admission. Admit too many students and your housing director will resign; admit too few and you’ll be looking for a job. It is not quite as challenging as predicting a hit movie in Hollywood, but getting it wrong is a lot less fun.

- The under-served are still under-served. I had hoped to find upon my return that, despite the attacks on affirmative action over the past two decades, colleges and universities might have found new strategies for serving students less likely to attend college. Some trends, like the focus on transfer and comprehensive review, are positive signs. Nevertheless, distressing research tells us that high-performing students from low-income backgrounds are less likely to apply to college than are mediocre-performing students from high-income backgrounds. Given that the United States is more stratified by income than at any time in the past 100 years (Reardon 2011), college going could easily become a rich person’s pursuit.

- The death of the California Master Plan for Higher Education is greatly exaggerated. The number of articles warning of the demise of Clark Kerr’s flawed masterpiece was increasing when I left in 2004; now it is an avalanche. Most recently, the University of Pennsylvania released “From Master Plan to Mediocrity,” a scathing indictment of California’s commitment to higher education (Finney et al. 2014). Still, the relentless chorus of doom is becoming vaguely comic as each succeeding critic attempts to convince us that the Master Plan is dead—and getting worse. The Master Plan is showing its age. UC, for its part, needs to do a better job recruiting students who reflect the breadth of diversity of California’s population. Nevertheless, the University enrolls more low-income and first-generation students than the entire Ivy League combined; finds a place for all Californians who meet the standards for guaranteed UC admission; and enrolls more community college transfer students than any highly selective postsecondary system in the United States. At least part of this success is due to the architects of the Master Plan who saw and planned for the future of California.

- College has become the most expensive bargain money can buy. The debate over the value of a college degree
Helping Veterans Succeed: A Handbook for Higher Education Administrators is AACRAO’s first comprehensive guide to address the unique needs of student veterans on campus. Through 16 chapters, this handbook gives campus administrators the tools to effectively help veterans achieve their academic goals and transition successfully into the workforce. Written by experts in the field, it covers transfer of credit and prior learning credits, campus communication strategies, certification, orientation efforts, implementing a Yellow Ribbon Program, and helping veterans transition from the classroom to the workforce. In addition, case studies and appendices offer relevant tips and resources for higher education professionals serving student veterans.

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seems far more strident now than a decade ago. This is partly our own doing. Even as many states have reduced their support for public higher education, tuition has increased significantly. Yet for all of the hand-wringing over “value” (I am reminded of Oscar Wilde, who said that a cynic knows the price of everything and the value of nothing), research is clear that the benefit to individuals who earn a degree—in civic mindedness, health, and, yes, income—remains significantly greater than for those without similar credentials. Will this always be true? I’d like to think so.

But don’t ask me. I’m new here (again).

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About the Author
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NOTE: The opinions expressed in this article are those of the author and do not necessarily represent official policy of the University of California.
Of the 5.3 million traumatic brain injuries (TBIs) sustained in the United States annually, 980,000 occur among young people between the ages of 15 and 24 (Centers for Disease Control and Prevention [CDC] 2010). This population faces numerous challenges in making the transition from high school to higher education. TBIs vary widely in cause, severity, and sequelae and often adversely affect individuals’ communication, cognition, and learning. And although most institutions provide services to students with disabilities, many students with a TBI fail to utilize those services; moreover, some campuses are poorly equipped to serve such students. To better understand the extent of the challenge, five undergraduate students who had sustained a traumatic brain injury during high school and who have since transitioned to college were asked to share their experiences.

INTRODUCTION

Each year, 980,000 young people between the ages of 15 and 24 sustain traumatic brain injuries (CDC 2010). The number of patients younger than 21 who have sustained such an injury exceeds that for any other age group (Langlois 2006). Among those diagnosed with traumatic brain injuries each year, approximately 230,000 are hospitalized for an extended period of time, and more than 50,000 die as a result of their injuries (Thurman et al. 1999). Studies show that teenagers between the ages of 14 and 19 are at the greatest risk of sustaining brain trauma as a result of vehicle- and sports-related accidents (CDC 2010).

The effects of traumatic brain injury may include learning disabilities and social and emotional deficits (Langlois 2006). Students who sustain a traumatic brain injury may experience significant academic, emotional, and social distress during their transition to and through higher education. The degree of cognitive dysfunction varies according to the severity of the TBI, but many students with TBIs experience “executive dysfunction, memory problems, diminished attention and impulse control, and information processing problems, all of which are critical to learning and school success” (Glang et al. 2013, p. 602).

Many students with TBIs encounter difficulties in daily functioning and a decrease in their overall quality of life following their injury (Glang et al. 2013). Students with TBI often lack self-awareness and are unable to recognize when their symptoms have become debilitating (Glang et al. 2013). Moreover, like many other students with disabilities, students with traumatic brain injuries often do not consider themselves to have a disability (Gil 2007). As a result, they students may refuse assistance from campus offices that could enhance their academic success. Finally, on
some campuses, students who do seek help may encounter staff who lack the training necessary to effectively address their needs. Colleges and universities must not only provide support services for this student population but also must encourage students to utilize the services in order to transition successfully to and through higher education.

Institutions that seek to help students with traumatic brain injuries attain their educational goals must answer questions that even researchers have yet to address. These include:

- What specific challenges confront students with TBI when they transition to college?
- How can we help students overcome these challenges?
- What accommodations or resources do students with TBI need to overcome those challenges?
- How do we ensure that the accommodations provided will fully meet students’ needs?

Answering these questions begins with listening to students’ voices.

Five undergraduate students who had sustained a TBI in high school as a result of a car accident, a fall, or a sports-related injury were interviewed. Each student has since transitioned successfully to college. Each student was asked for recommendations for student services offices that seek to help students with TBI overcome the challenges presented by the transition to college.

**STUDENT NARRATIVES**

The effects and the severity of traumatic brain injuries vary widely, and the extent and consequences of such injuries can have a significant impact on a student’s ability to transition successfully from high school to college. TBIs can result in learning disabilities such as ADHD or decreased cognitive processing speed as well as physical disabilities such as difficulty walking or talking or problems with balance and coordination. All of the students who were interviewed spoke of a significant decrease in their cognitive functioning and processing speed after their injuries. Casey explained:

*Things were slower but also...sometimes I just don’t know how or it just doesn’t click. That’s the biggest struggle....*

Decreased cognitive processing speed can greatly increase the amount of time and effort students must invest in the transition to college—beginning with reading admission materials and completing college applications. Such difficulties can affect students even before they arrive at college. (Casey noted that he needed assistance to complete the required reading for freshmen.) Once students with TBI are at college, their slower cognitive and processing speeds can greatly increase the amount of time they must spend on homework and studying; they must have excellent time management skills if they are to transition to college successfully.

Four of the five students who were interviewed had ADHD or other attention-related problems after their injuries. Whereas some simply found it difficult to concentrate, others were unable to work on a single task for more than five minutes. Most students reported that their attention problems improved during the course of their rehabilitation and continued to do so long after they completed treatment. Others experienced improvement as a result of either medication or taking frequent breaks. John noted, “Before the injury, I had ADHD.... But after the injury, it seemed like it had worsened...my attention span was very low, and I actually still have issues with that.” ADHD, like slower cognition and processing speeds, can make students’ transition to college more difficult.

Students with more severe traumatic brain injuries reported that they had to relearn how to walk after their accidents. Casey needed physical therapy. It took Jesse almost a year to learn to walk again given the combination of his spinal cord injury and traumatic brain injury and initial paralysis of his right side. Three of the students had persistent problems with coordination and balance and received physical and occupational therapy throughout their rehabilitation. Karen’s balance and vestibular systems were upset by even the slightest movement, necessitating extensive rehabilitation and therapy. Problems with walking and coordination limit students’ ability to travel from building to building and so can adversely affect their transition to college.

Several students noted that soon after their accidents, they experienced memory loss that lasted from a few
minutes to several weeks. Other students reported vivid “memories” that were clearly not real. Casey remembered his hospitalization as a series of made-up memories that coordinated with certain places and objects in the hospital; the memories were so clear he “could draw you a map.” Most students experienced temporary memory problems shortly after their accidents whereas others had more persistent memory problems. John explained that because of his aphasia, he couldn’t “grasp on to words.” Although he often knew the word he wanted to use, he simply “couldn’t come up with it.”

Some students experienced extreme fatigue in conjunction with headaches as a result of their traumatic brain injuries. Such headaches can be debilitating and often interfere with task completion. Karen said:

So I had a little dizziness, and fatigue was a big one if I did any form of exercise, even moving off the couch. Getting up to make lunch made me tired.... So I had trouble concentrating, which was a really big thing. And when I did concentrate, I would get a headache really, really quickly, and then I would lie down. Then that whole process would take two hours because I would nap forever.

Depression and anxiety are also common among individuals with traumatic brain injuries. These disorders can relate to the loss of skills or the inability to live as one did before the injury. Karen experienced severe anxiety as a result of having to take a year off between her senior year of high school and her freshman year of college.

The last doctor I saw was a therapist because I got anxiety because I was missing all of this school and not functioning like a normal person. And then my anxiety gave me headaches, and I was really emotional. I couldn’t be social because everything gave me a headache.

Fatigue, headaches, and memory loss inevitably affect a student’s ability to transition smoothly from high school to college. In the time it takes to walk from her dorm to her first class, a student may forget where she was supposed to go, get a headache, or feel displaced and in a daze; if she arrives at class at all, she may be fatigued and in pain. After such a journey, it is nearly impossible for any student to learn.

Neuropathic pain, another effect of traumatic brain injuries, results from damage to the nerve fibers. The damaged fibers send incorrect signals to pain receptors in specific parts of the body (American Chronic Pain Association 2014). Jesse experienced significant neuropathic pain and noted that “It’s never a continuous thing, and it feels like it’s in a concentrated area. For a bit it’ll feel like stabbing pain, and then 10 seconds later it’ll happen again, and it can do that all day.”

Although the symptoms and effects of TBI vary, all of the participants reported that their transition to college was affected by some combination of the symptoms described above. Understanding the most common effects of traumatic brain injury can enable higher education administrators and disabilities services personnel to identify appropriate accommodations.

**ACCOMMODATIONS**

Accommodations facilitate students’ ability to learn class material by decreasing the effort required so students can focus and perform to the best of their ability. Accommodations are essential to easing the transition of students with TBIs from high school to college.

The most common accommodation participants received was extra time to complete academic tasks. This accommodation was applied most often to tests and quizzes in order to help compensate for students’ decreased cognitive processing speed. Karen reported, “I think it helps with my anxiety to know that I have more time even if I don’t need it. But last semester, I needed it for a lot of tests, and that was really helpful.... I’m going to request it again.” Melissa observed that having extra time helps her feel as competent as her peers. She said, “If I have a tiny bit of extra time, then I can perform academically as well as any other person. So I’ve proved that.”

Extra time also helps students compensate for other challenges. For example, Jesse’s neuropathic pain sometimes prevents him from completing assignments, studying for tests, or even paying attention in class. The accommodation of extra time gives Jesse the option of talking to his professors when the pain occurs so he can do his best in class despite his injury and its effects.

Priority registration was another common accommodation. Implementation of this accommodation varied by school: Whereas some students were able to sign up
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for classes before the standard registration time, others received special priority that allowed them to enroll in closed sections. Students who registered early (either at the top of their class or as a higher class standing) found that it greatly relieved their stress, while others valued the opportunity to avoid having to enroll in 8 a.m. or back-to-back classes.

Karen discussed the benefits of priority registration: “Last semester and this semester, I don’t have 8 a.m. [classes]. But I was able to register early, and it has been so helpful because I was able to space out [my classes].” Casey concurred, saying that although “registration is still so stressful, being able to [choose classes] at the front of the junior class is incredibly helpful.” All five students identified priority registration as one of the greatest contributors to their academic success.

Other accommodations included audio books and note takers, both of which are intended to compensate for students’ slower cognitive processing speed. John received his first audio book to help him complete the freshman reading assignment. He noted that it took him “literally forever to read” and that he had to “read things multiple times to get them to click.” He found it very helpful that the school had downloaded the reading as an audio book onto a Kindle.

Note takers enable students to focus on one aspect of learning at a time. During class, students typically listen to the instructor while taking notes. Having a note taker simplifies this process, allowing students to focus on listening to and thinking about the lecture without having to also take notes. Although the method of transferring the notes to the student with a TBI differs among institutions, note takers are a common accommodation. John had note takers at both of the institutions he attended: One used carbon paper and thereby produced an identical set of notes whereas others scanned their notes and sent them to John via e-mail.

Some students with disabilities receive the accommodation of taking tests in a separate location from the rest of the class. All five students in the current study were offered this accommodation, though only three chose to make use of it. Karen reported that seclusion helped ease the anxiety she experiences as a result of her traumatic brain injury. Melissa noted that taking tests in the disabilities services center rather than in the classroom helped meet her need for extra time.

John identified two other accommodations he found especially helpful: taking fewer credit hours than the minimum required for full-time enrollment and not having a roommate. John’s classification as a full-time student despite being enrolled part time allows him to focus on his classes and continue to receive financial aid and on-campus housing (both of which ordinarily require full-time student status). This accommodation enables students with traumatic brain injuries to complete their degrees at their own pace while performing to the best of their ability. Experiencing academic success increases the likelihood that students will have a smooth transition from high school to college.

**CHALLENGES**

The process of recovery and of continuing one’s education depends in large part on the severity of a student’s traumatic brain injury. Nevertheless, students can take action to increase their chances of success in college. Several students offered advice and encouragement for other students suffering from traumatic brain injuries.

Students with traumatic brain injuries are urged to register with the disabilities services offices at their institutions. Melissa said, “It’s not a bad thing to ask for help at any time. [The institution] has the resources for you to succeed, and that’s all they want—for you to succeed.” John’s experience was less positive, but he, too, urges students with traumatic brain injuries to “sign up with disabilities services. Even though it only helps a little, it still helps.”

Karen said, “They did such a great job taking care of me and helping me that for students to deny themselves help is downright silly.” The students in this study also offered encouragement to fellow TBI survivors. Melissa said, “You’re not dumb at all. Whatever happened wasn’t your fault, and all you can do is look up and look forward. Keep up with the positive attitude; that’s the biggest thing, I think.”

A key challenge of transitioning to higher education after a traumatic brain injury is coping with one’s symptoms while learning the skills that are necessary to succeed in college. Students noted that time management skills are essential, but they can be especially difficult to develop given the attention problems that often plague individuals with TBI. Melissa observed, “The only thing that I really struggle with now is timing stuff . . . getting work done and buckling down.” Casey agreed, noting that students
with traumatic brain injuries need to specifically “give themselves time to do things...and learn time management skills.”

Melissa is employed by her institution as a peer mentor; she assists other students who are registered with disabilities services. She has found her work to be incredibly rewarding because it gives her the opportunity to teach others the skills she herself had to learn after her injury.

“I’m actually employed as a mentor... They said, “You’ve excelled academically, and we want you to help others through disabilities services to do well.” The one girl I was tutoring in the fall had a really bad concussion. She had similar accommodations [to mine], but she was really struggling. I taught her everything that I did. I learned a lot from rehab, but a lot of it I taught myself through figuring out what worked. So studying for tests, writing papers, outlining stuff, all the review sheets I do...she’s my pride and joy. She pulled a D to an A- after she used the things I taught her, and now she’s doing so well. It’s fantastic.

Casey noted that he would have appreciated more assistance at college. While he was finishing high school, he had weekly appointments with a neuropsychologist. When asked about the effects of the injury for which he does not receive accommodations, Casey described the emotional problems that many TBI patients experience and how he had received help for those symptoms previously:

Sometimes I’ll get more upset about something, but there’s not really anything that could be fixed about that. I just have to know how to deal with it. I guess if anything, just having someone to talk to you. After the accident...they had me go to a neuropsychologist every week, and it was just hanging out, saying what was on my mind, and it was a nice connection to have. If I ever needed to call him, I could. If I ever got really upset, we could talk.

In addition to receiving psychological support, Casey also found that having a weekly check-in had provided support and encouragement in high school that he lacked in college. While he didn’t have a specific need for a therapist, Casey wished he had someone to check in with him occasionally and to help motivate him:

I wouldn’t mind having someone there to talk to—to know that someone is there. I think the effects of TBI go way beyond academics, and...a helping hand just to give a push would be appreciated. I’m not asking people to reach out to me; I’m not a charity case. But [it would have been helpful] if someone [had asked], “Hey, have you done this, have you started looking at grad school?” As a freshman you get that, but it just kind of shuts down afterwards. Even if my academic advisor said something like, “[T]ake this [class], you’ll need it for grad school”—just someone to make sure I’m not missing anything.

Institutions can take a number of actions to enhance the success of students with TBIs.

CHALLENGES ASSOCIATED WITH DISABILITIES SERVICES

The participants interviewed for this study reported a significant range of experiences with their institutions’ disabilities services offices. Interactions with disabilities services can have an “all or nothing” effect on a student’s transition from high school to college as well as on her overall college career, making the difference between a successful and an unsuccessful transition. It is thus imperative that disabilities services personnel provide the best possible service to incoming students as well as to upperclassmen.

The participants were asked to discuss their experiences with disabilities services and to offer suggestions and comments related to how they could have been—or still could be—improved. John emphasized that institutions need to provide adequate accommodations rather than products that seem to offer quick and easy solutions. For example, when John received his first audio book for the freshman reading assignment, it was a complete audio book that had been downloaded to a Kindle—an accommodation he found very helpful. Yet subsequent audio books were not as helpful. John recalled:

After [the first audio book], they gave me PDF files and told me of a website that I could go to to download reading software—something that could read PDF files—but it doesn’t exactly work that well. Honestly, I might as well be reading [the books] myself.

John learned that this “shortcut” was the program that both his first and second institutions used in place of audio books. When asked what the institutions could do to improve his experience, he replied, “They should actually...
give people audio books instead of taking a shortcut—a cheap shortcut.”

Few of the students were able to suggest any accommodations that were not already provided, but Karen mentioned that it would have been helpful for disabilities services to send a letter to her professors explaining her accident. “I know we already send out accommodation forms, but I feel that with HIPPA, they’re not allowed to say a lot on the form. But it’d be helpful to have more on the form to give more information about what’s going on.” Karen suggested that such information could be included in the letter at the student’s request.

When asked about their experiences with their institution’s disabilities services offices, students’ responses varied. John noted that “the office lady isn’t the friendliest” while Casey, who attended a different institution, reported that “the office is pretty good” and advised disabilities services personnel to “be friendly and supportive and not too quick to judge.” Jesse advised that they “keep in mind that TBI people can forget meetings. Just remember that it can happen to students a lot.” Melissa stressed her appreciation for those who treat students with TBIs as normal people:

[My disabilities services staff member] understands that people who have disabilities and people who have traumatic brain injuries are different, and she didn’t try to baby me or anything, and I loved that. She understood that...I’m fully functional.

Karen also encouraged disabilities services staff members to remember that each case is different:

I’d just say to keep being open-minded, that every TBI is different. ...Everyone comes in at a different spot.... It’s nice to have an example, but just keep being flexible about each case.

DISCUSSION

While the addition of traumatic brain injuries to the Individuals with Disabilities Education Act and the passing of the Traumatic Brain Injury Reauthorization Act of 2014 represent significant steps forward in the effort to help students with TBIs succeed, substantial room for improvement remains. The academic success of students who have suffered traumatic brain injuries depends on the quality and quantity of accommodations and support offered by their institutions, awareness of these resources, and students’ willingness to make use of them.

This study offers a glimpse into the experiences and perspectives of students with TBIs. The students’ narratives afford insight into which accommodations work and which do not. In particular, they may help disabilities services staff and other higher education administrators develop more effective resources and services for helping students with TBIs transition successfully to college and ultimately complete their degrees.

The quantity and quality of services provided to students with traumatic brain injuries have increased since the addition of TBI to the Individuals with Disabilities Education Act in 1990. Nevertheless, colleges and universities fail to fully meet the needs of this population. Accommodations are not always offered, and when they are, they are often presented piecemeal rather than as a coordinated effort.

As described above, John found that the audio books he was provided were of little if any real assistance. His institution may have believed it was fulfilling his needs, but the reality was far less. John noted that even though being given actual audio books would have solved his problem, when he was given only the PDF reading software, he “might as well [have read the books himself].” One problem may be lack of funding, but too often, it is a lack of understanding on the part of disabilities services staff. The present research may help disabilities services offices identify solutions to these kinds of problems.

Peer mentoring programs are not commonly offered but seem promising. Melissa spoke enthusiastically about the value of the peer mentoring program and described the happiness she felt as a result of helping other students with TBIs learn necessary skills and improve their grades. Many critical skills cannot be provided through classroom accommodations but can be taught through one-on-one instruction—particularly as part of a peer mentoring program.

The circumstances and needs of each student who suffers a traumatic brain injury differ significantly from those of other students who suffer such injuries. As a result, it can be difficult to train staff to identify and provide the necessary accommodations for members of this population. Each student interviewed for this study noted that as he learned more about his injury, he also learned more
about which accommodations would be most beneficial. Students also observed that it was helpful to choose their accommodations from a list of those that others had found useful. Implementing such suggestions and training disabilities services staff to be flexible and understanding may prove to be the most important keys to fostering student success.

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About the Authors

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ASHLEY D. EDWARDS is a senior undergraduate student at Elon University pursuing a B.A. in Psychology and Neuroscience. As a Research Assistant to the Registrar, Ashley has published works on underrepresented populations and continues with a passion for assisting those populations, particularly student veterans, through current research projects. Ashley is also an Office of the Registrar Ambassador serving students, faculty, and staff in an administrative capacity. Upon graduation in May, Ashley hopes to continue her work in Academic Services.

Helping Veterans Succeed: A Handbook for Higher Education Administrators is AACRAO’s first comprehensive guide to address the unique needs of student veterans on campus. Through 16 chapters, this handbook gives campus administrators the tools to effectively help veterans achieve their academic goals and transition successfully into the workforce. Written by experts in the field, it covers transfer of credit and prior learning credits, campus communication strategies, certification, orientation efforts, implementing a Yellow Ribbon Program, and helping veterans transition from the classroom to the workforce. In addition, case studies and appendices offer relevant tips and resources for higher education professionals serving student veterans.

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The financial aid office plays an important role with regard to an institution’s enrollment management goals. Some colleges and universities have a significant amount of institutional funds to award to students each year. Meetings are held to discuss, develop, and outline the awarding philosophy for prospective and currently enrolled students. At numerous other colleges and universities, only limited funds are available for scholarships, and federal student aid is the primary source of finances for students and their families.

The financial aid office helps students and families understand their options and responsibilities relative to paying for higher education. Federal, state, and institutional rules and regulations do not allow the financial aid office to always offer the funds needed to fully meet college and university expenses.

Strong emotions can come to the forefront when dealing with situations related to personal finance. Sometimes a financial aid office has to deny a student or family’s request for additional funding. Doing so creates an interesting dynamic. Financial aid administrators routinely make exceptions (to the extent that regulations permit them to) in order to assist students and families. When such action still does not provide the preferred outcome, institutional funding options can be considered.

If institutional funding is not available or is not appropriate given the particular situation, then students and families may complain to the president’s office or to the vice president or dean who supervises the financial aid department. (People are used to asking to speak with a manager when they are not satisfied with the services provided by an organization.) In situations in which the financial aid office has already utilized all the legal exceptions it can, a student’s request for additional aid may again be denied, by the dean, the vice president, or the president.

Senior administration is not always in agreement with the financial aid office. It may believe that the financial aid director can make an exception that has not yet been offered. It may think that something can be done to offer students more funding—if only the financial aid director would communicate the solution.

Such situations can result in senior-level administration perceiving the financial aid office as not being student centered and as not offering good-quality customer service. This can result in the department being perceived as not supporting the institution’s enrollment management goals.

How can the financial aid office support an institution’s enrollment management goals? The first step is to review
how the institution approaches the enrollment management process. Consider the following questions:

- Enrollment management philosophy: What approaches are being taken to recruit and enroll students?
- University marketing: In what ways does the institution reach out to potential students?
- Admissions and financial aid coordination: How do these two offices coordinate services in order to recruit and enroll students?
- Utilization of technology: Is technology being used to the maximum extent possible to support the work of staff and to offer students more self-service options?
- Student retention: How are students being helped to complete their degree programs?
- Strategic enrollment management plan: Is a formal enrollment management plan in place?

How an institution informally and formally defines and manages its day-to-day operations in these six categories has an impact on the financial aid office. Even if a formal enrollment management plan is not in place, each institution nevertheless has a way of providing services to new and continuing students. For example, many institutions advertise for and accept late admissions applications. If an institution accepts late applicants, it should have input from each student service office—including financial aid—about how best to assist them. The institution needs to be aware of the challenges that confront the financial aid office as a result of its admissions policies.

Once an institution’s administrators have answered the enrollment management questions above, it is ready for the following action steps:

- Review data from institutional research to determine admissions yield rates. Admissions offices sometimes work hard but fail to obtain the results they seek. Understanding the yield rate can help an institution better allocate admissions and financial aid staff time.

For example, the yield rate for the past five years may be stuck at 50 percent, even though all admitted stu-

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dents have been offered estimated financial aid award packages. It is clear that offering all admitted students an estimated financial aid award package has not helped to yield greater percentages of students. There must be some other reason that students are not choosing to enroll. Financial aid staff can better utilize their time by packaging financial aid for students who have committed to enroll at their institution.

- Rather than make assumptions, determine which institutions are true competitors. Institutions sometimes make assumptions related to other institutions with which they compete for students. Policies and procedures thus may be based on the wrong information. For example, the admissions office and upper administration at a four-year, public institution may believe that its competition is other four-year public universities in the state. Yet data demonstrate that local community colleges are its primary competition.

If this is the case, then more efforts may be needed to increase institutional scholarships in order to attract students. This can have the result of making an institution’s overall costs similar to those of its competitors (in this example, local community colleges). Also consider promoting transfer scholarships to prospective students. This would allow students to enroll initially at the community college but to consider transferring to the four-year institution in the future.

- Coordinate admissions and financial aid efforts relative to admissions applications. Knowing an institution’s yield rate and which schools are its true competitors can inform an effective partnership of the admissions and financial aid offices. Focusing on data will help prevent blame of the financial aid office and instead will promote the realization that the financial aid office is a partner in enrollment efforts.

  For example, the admissions office may be under pressure to admit and enroll additional students at the end of July for the upcoming fall term. The financial aid office should inform the admissions office of its progress in processing financial aid for current applicants. Priorities can be adjusted so the late push to enroll more students is supported by the financial aid office.

  Consider hiring temporary staff to answer phone calls during peak processing times and to verify student files. Doing so allows permanent financial aid staff to concentrate on other duties. It can be beneficial for the admissions and financial aid offices to submit a joint request for temporary staff to assist with the last-minute enrollment push rather than to blame the financial aid office for falling behind on its processing.

- Evaluate the institution’s award philosophy to ensure that it reflects data as well as institutional needs. Are awards being made early in the hope of beating or at least matching the timing of institutional competitors’ release of financial aid packages? Are award packages communicated early enough for prospective students to give the institution full consideration?

  Recently, students from Philadelphia, Pennsylvania, and Washington, DC, who were attending a particular institution were failing to bring thousands of dollars from local funding sources. (Eligible students from Philadelphia can apply for the Philadelphia Scholars Program and be awarded from $300 to $5,000 per year for up to six years of college; students from Washington, DC, who meet local funding guidelines could bring as much as $2,070 each year to campus.) The college was encouraged to send estimated or actual award packages sooner so prospective students would choose to enroll at the college and bring local funding with them.

  A financial aid office juggles multiple responsibilities: It must remain in compliance with federal, state, and institutional regulations; provide high-quality services to students and families; and support its institution’s enrollment and financial plans. The examples provided in this article can help the financial aid office support its institution’s enrollment management goals. Ultimately, the financial aid office will help students access postsecondary education at a price they can afford. Even more important, it can facilitate students’ experience of academic success.

About the Author

KENNETH MCGHEE is an enrollment management and financial aid consultant. He began his career as a financial aid administrator in 1995, since 1998, he has trained fellow higher education administrators, high school counselors, and college admissions counselors in the financial aid process at the state, regional, and national levels. He has served as assistant director of financial aid for multi-campus community colleges and universities. As a consultant, he has assisted more than 50 colleges and universities from all sectors. McGhee earned his undergraduate degree from the University of Alabama at Birmingham and his graduate degree from Northern Illinois University. He has earned the post-master’s degree certificate in enrollment management from Noel Levitz and Capella University.
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CHECKLIST FOR CHANGE: MAKING AMERICAN HIGHER EDUCATION A SUSTAINABLE ENTERPRISE

ROBERT ZEMSKY. NEW JERSEY: RUTGERS UNIVERSITY PRESS, 2013. 240 PP.
Reviewed by James Steen

There is no shortage of reading material currently available that bemoans the challenges facing colleges and universities. Spiraling costs, overdependence on federal and state aid, resistance to change, and shifting demographics are all issues that garner attention from both inside and outside the academy. To date, higher education as an industry has been fairly resilient, thus far avoiding the predicted higher education bubble. However, warning signs and admonitions from leaders in the field suggest that an uncertain future is looming on the horizon, if not already upon us.

Robert Zemsky is a leader among leaders in higher education, public policy, and educational research. He has advocated and called for educational reforms for more than four decades in an attempt to secure a future for American higher education. Checklist for Change, Zemsky’s latest book, outlines the significant changes college and university officials should consider to position their institutions for future sustainability. No institution is immune; every sector of higher education is at risk as Zemsky leaves no stone unturned, implicating publics, privates, for-profits, non-profits, two-year, four-year, Liberal Arts colleges, research universities, even the elite universities. The title is a call to action as well as a challenge to do something that higher education does not do well: Change.

According to Zemsky, colleges and universities are stagnant and most have not evolved since the 1980s. Decades of reports, commissions, and studies outlining changes to improve higher education have fallen on deaf ears. Fighting against substantive changes is a professorate of tenured faculty, often supported by powerful unions, who see no need to change. What is needed is a significant event to break the cycle of collegial gridlock; Zemsky believes this could happen sooner than later.

Three forces identified by the author may bring about the changes that Zemsky argues are urgently needed in higher education. The first is the shrinking supply of financial resources that is beginning to erode net revenue. While state and federal support declines, institutions are being forced to reevaluate their affordability, net price, and discount rate as the annual budget requires a greater percentage of revenue from tuition each year. These financial challenges may motivate some proactive colleges and universities to implement significant changes. However, the author suggests that most institutions will be forced to respond reactively in an effort to simply survive.
The second motivation for change will be the marginalization of faculty members as involvement from outside sources, such as philanthropic foundations and policy makers, apply pressure on institutions to higher performance standards. An emphasis on productivity has led supporters to demand that prospective students have greater access to education, higher completion rates, and lower costs. Zemsky suggests increasingly more faculty have become part of the problem, as opposed to being change agents pushing for a solution. He believes colleges and universities will be forced to hire leaders who can respond to these pressures and bring about the changes necessary to adapt.

The third influencing force for change is described as the “disruptive innovation” brought about by the for-profit sector. Although the for-profit sector has been subjected to significant governmental intrusion and regulations, these institutions have also been innovative leaders in higher education delivery methods. For-profit institutions have successfully cultivated new markets such as adult education, as well as pioneered online education. In contrast, traditional programs are becoming economically unsustainable after decades of adding an overabundance of courses or electives to the curriculum that must be taught and maintained. Zemsky praises the for-profit sector for creating clear pathways toward graduation, using a standardized curriculum that has been designed from the top down. At these for-profit institutions, the curriculum is typically delivered and assessed strategically in order to maximize both student progress and return on investment.

The last three chapters of the book present a checklist in which Zemsky outlines 20 initiatives, grouped under three broad categories, which could change U.S. higher education. The first category involves strengthening the role of the faculty who have become increasingly marginalized and less influential. The second category involves recommendations to transform the traditional collegiate curriculum. The third category in the checklist involves more oversight and accountability for higher education. Each of these categories of recommended change is described more fully in the following paragraphs.

Zemsky’s proposed initiatives to strengthen faculty influence call for a new faculty leadership that could end the gridlock caused in part by shared governance in favor of more collaboration with colleagues in other disciplines. Working collectively requires faculty to put an end to the destructive rhetoric that is all too common in the academy. Faculty should also collaborate with and welcome non-tenured instructional staff to the table as the traditional model of tenure is not sustainable. Finally the metric of course load as defined by hours taught each term must be reexamined; Zemsky believes that instructional loads should be assigned to departments whose faculty collaborate to cover courses equitably.

After focusing on efforts to engage the faculty, the next priority on the checklist involves initiatives to change the curriculum. Moving away from a fragmented curriculum based on a discipline-specific mindset, courses should be designed based on a clear statement of purpose. Rather than using seat time as a metric, Zemsky argues that the curriculum should be based on competencies that use learning pathways, such as linked courses, as a road map to completion. Other checklist items suggest that the curriculum should embrace innovation and adopt learning management systems, as well as incorporate formal testing to ascertain learning outcomes. The final curriculum change advocated by Zemsky is to create a three-year baccalaureate degree based on 90 credits as opposed to 120, which reduces costs by 25 percent and allows students to enter the workforce or graduate school a year earlier. Most three-year degree programs that exist currently simply compress 120 credit hours into three years.

The third, and most distressing, category of the checklist addresses the responsibility of the federal government to fix, fund and hold higher education accountable. One way to do this is for the federal government to award funds to institutions that increase graduation rates, specifically for high-risk students. Also included among Zemsky’s recommendations is a proposal that the government fund financial aid for students in remedial courses, which could also support a three-year degree after one year of remediation. Other initiatives include a more active role for institutions in the awarding of student loans, formalizing a system to regulate financial aid, and changing the timing of disbursement for federal aid to promote persistence and completion rates. Zemsky also proposes the creation of a federal testing agency to measure outcomes in a manner parallel to the way many states measure proficiency for primary and secondary students before promoting them to the next grade. The final initiative in this category
would establish an agency to more closely monitor compliance for institutions receiving federal student aid.

According to Zemsky, higher education as an industry has successfully resisted change for the past 30 years. Completing even one of the 20 action items on this Checklist for Change would prove to be a challenge. However, pressure to change is increasing both internally and externally, and now may be the best time in recent history to convince faculty, staff, and administrators to finally fix what is not working. The issues Zemsky presents in this book are extremely relevant and timely in terms of redefining success and wrestling with the obstacles facing the higher education sector. Not only should this checklist demand our attention, but many of these initiatives should motivate us to respond proactively to facilitate change on our own campus. That being said, I believe the checklist functions best as a primer to challenge us to further research and discuss these issues, as opposed to being a realistic list of implementable action items.

About the Author

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REMAKING COLLEGE: INNOVATION AND THE LIBERAL ARTS


Reviewed by Matthew Fifolt

Remaking College is a compilation of essays that explore the current and future role of liberal arts colleges in the United States. This collaborative writing project is an extension of a 2012 conference in which leaders met to discuss issues related to the conference theme: “The Future of the Liberal Arts College in America and Its Leadership Role in Education around the World.” These essays are the reflections of 20 presidents and other leaders of liberal arts institutions.
The authors contend that “[t]he contemporary residential college is a surprising case study in flexibility, strength, and irrepressibility, all key components of the kind of resiliency that individuals and institutions need in the 21st century” (p. 1). Editors Chopp, Frost, and Weiss note further that the strength of the liberal arts college is in its twofold mission to (1) enhance critical thinking and (2) foster intentional community. The authors contend that as a result of these commitments, students who pursue a liberal arts education develop higher cognitive skills, increased sensitivity to ethical issues, and greater tolerance for ambiguity (p. 5). Despite the challenges that liberal arts colleges now face (e.g., increased focus on professional training, rising costs), the authors encourage education leaders not only to continue but also to accelerate efforts to innovate and communicate effectively in order to build an education system that is “worthy of the dynamic opportunities ahead” (p. 10).

**MAKING THE CASE FOR THE LIBERAL ARTS**

Chopp describes the liberal arts college as “an incubator for intellectual agility” (p. 17) where students can pursue their individual passions, live and learn in a vibrant community, and, ultimately, use their knowledge to improve the world. Further, she suggests that the value of the liberal arts education “rests on its long and unique tradition and on what it can offer in a world in which learning to navigate the new may be far more important than the ability to master the old” (p. 17). That is to say, in contrast to the current trend in higher education to focus on job-specific training, liberal arts students gain the skills that employers most want: critical thinking, ability to innovate, and the capacity to work in teams with a diverse group of individuals.

Chopp notes that liberal arts students are eager to engage in “problem-centered, real-world-based, digitally informed learning” (p. 19). Similarly, faculty members want to work with students to help them develop deeper connections between theory and practice. Therefore, in addition to the rich historical and philosophical traditions of the liberal arts, Chopp proposes that liberal arts institutions continue to “reinvent the structures and cultures of education to match the forms of social and participatory learning, teaching, and knowledge creation that will dominate the 21st century” (p. 19).

**Precipitating factors.** Weiss concurs with Chopp’s assessment of a liberal arts education and identifies a number of precipitating factors that will continue to challenge public and private institutions over the next several decades. These include: (1) keeping pace with emergent technologies while controlling costs; (2) addressing the needs of an increasingly diverse U.S. student population, including more first-generation college students; (3) responding to mounting public skepticism of higher education; and (4) managing escalating costs in an extremely competitive environment. Weiss predicts that these factors, as well as market and financial constraints, will lead to greater differentiation among institutions and, in all likelihood, consolidation of schools.

Despite these circumstances, Weiss suggests that selective liberal arts colleges are especially well-positioned to lead in advancing undergraduate education because of their “strong and diversified resource base, the capacity to adapt more quickly to change, their proven education model, and their continued focus on the needs of undergraduates” (p. 36). He concludes that the success of liberal arts institutions will depend on their ability to build upon key strengths while minimizing weaknesses.

**ECONOMICS AND AFFORDABILITY**

Authors Hill, Tiefenthaler, and Welsh note that over the past several decades, supply and demand for higher education have shaped the market price of a college education. The authors identify three factors that have influenced the demand for college: (1) the increase in the number of college-bound students as a result of population growth; (2) an increasing gap between the unemployment rates of those with a college degree and those without; and (3) students’ growing demands to attend the most selective institutions and the consequent increase in demand for “top” colleges and universities (p. 45). This last factor is consistent with the findings of Mettler (2014), who writes, “Today, it matters increasingly not only whether you go to college but also what type of college you attend” (p. 8). Stated simply, colleges and universities with greater financial resources can spend more money per student on essential and desired services.

Hill, Tiefenthaler, and Welsh also identify a number of factors that affect the supply and the cost structure of higher education, including (1) higher costs to employ individuals who are qualified to produce a highly skilled workforce (i.e., faculty), (2) technological improvements that have increased rather than decreased costs, and (3) a
greater need for financial aid to attract and retain a diverse student population. The authors provide several recommendations for controlling costs, such as streamlining the curriculum and shifting non-core instructional activities away from faculty. Ultimately, they encourage leaders of liberal arts colleges to “think creatively, continue to look for ways to control costs, and watch for new opportunities that reflect changing conditions” (p. 56).

**SHARED GOVERNANCE**

According to Frost and Storbeck, shared governance is a key issue for leaders of liberal arts colleges to consider. The authors note that within a system of shared governance, the president is called upon to serve dual roles in which he or she is accountable to a board of trustees as well as to the institution’s faculty. This can be especially difficult given that the members of these two groups typically have vastly different backgrounds and experiences.

Frost and Storbeck derived two major themes from structured interviews with three groups of stakeholders (i.e., presidents, members of boards of trustees, and faculty members): increased collaboration in the wake of the recent financial crisis in the United States and a clash of cultures between a younger generation of leaders and the more seasoned members of boards of trustees. The primary difference between these two groups is their conflicting understandings of the collaborative decision-making process.

The authors identify a number of ways presidents could improve relationships among stakeholders and advance the mission of liberal arts institutions:

- Communicate frequently with stakeholders.
- Demonstrate transparency in policies and practices.
- Engage more consistently with board members.
- Initiate collaborative projects that are limited in scope.
- Allow actions to be guided by institutional strengths.

These recommendations mirror those presented by Trachtenberg, Kauvar, and Bogue (2013) in *Presidencies Derailed*. In both cases, the authors cite a lack of interpersonal skills and poor institutional fit as the root causes of many presidential failures.

**INTERDISCIPLINARY FOCUS AND TECHNOLOGY**

Multiple authors explore the roles of interdisciplinary studies and technology in the liberal arts. Specifically, they consider the ways in which interdisciplinarity and emergent technologies can help students develop habits of mind that promote innovative and holistic knowledge. Hill notes that the opportunity to work across departments and disciplines can appeal to faculty members’ core motivations, including autonomy, community, recognition, and efficacy (p. 91). According to Hill, a focus on interdisciplinary studies is one of the true hallmarks of a liberal arts education and a strength that should be encouraged and rewarded.

Falk and Guthrie echo Weiss’s concerns about the ever-increasing cost of technology in higher education but recognize that these advancements are merely tools to more effectively support the existing missions of liberal arts colleges. Both advocate for institutional leaders to develop strategic plans and processes regarding the acquisition and implementation of information technology to “educate the most students possible as effectively and economically as possible” (p. 114) while at the same time preserving the key elements of human interaction, which matter most in any learning environment (Chambliss and Takacs 2014).

**COLLABORATION**

A number of contributing authors discuss the value of and the need for collaborations beyond the liberal arts institution. They note that opportunities for collaboration abound both at home (e.g., through shared courses, joint faculty appointments) as well as abroad (e.g., national and international affiliations, study away). Christ describes a unique partnership at Smith College in which teams of students spend a year working with a mentor from a commercial, government, not-for-profit, or research setting to address a current problem or concern. Similar to an engineering senior design project, this capstone experience is designed specifically for liberal arts majors.

In addition to academic collaborations, Christ identifies economies of scale that could be achieved through the consolidation of administrative services (e.g., payroll, accounting, grants management). Christ states, “The provision of shared services may be one of the best opportunities to reduce cost without reducing educational quality” (p. 141). The author notes that productive and mutually beneficial collaborations require trust and communication. Tobin agrees: “Collaboration is neither a panacea nor a silver bullet, but it is the most underutilized resource in the liberal arts college toolbox” (p. 133).
**SUMMARY**

Rosenberg argues that after adjusting for size, small liberal arts institutions are disproportionately successful at producing eventual recipients of doctoral degrees in science and engineering. He fails to acknowledge, however, that these students are also disproportionately representative of families of higher socioeconomic status. In fact, in an earlier chapter, Hill, Tiefenthaler, and Welsh report that among the most selective private colleges and universities, “70 percent of students come from the top 20 percent of income distribution” (p. 53). Therefore, it should come as no surprise that graduates of liberal arts institutions are exceptionally well-prepared for graduate studies. This further validates Mettler’s critique of the widening economic disparity and class division in higher education.

The authors provide compelling evidence to support the argument that liberal arts education should and, indeed, will continue to play an important role in the U.S. higher education system. Further, they note that a number of select liberal arts colleges actually thrive in this highly competitive environment. Therefore, the perpetual existence of liberal arts colleges seems inevitable as long as they continue to serve a certain segment of the population. However, considering that student enrollment at liberal arts colleges currently peaks at between 3 and 4 percent of the overall undergraduate enrollment in U.S. higher education, the impact of these institutions remains questionable.

Crutcher suggests that liberal arts colleges are facing new challenges from larger state universities that have established honors programs and other intentional learning communities and that have thereby “replicated our approach to undergraduate education, in some cases, quite effectively” (p. 182) (emphasis added). This sense of proprietorship raises an important question: If leaders of liberal arts colleges are convinced that this type of learning experience is best for students, should it be limited to students who can afford to attend small, residential liberal arts colleges? That is to say, should the best practices of the liberal arts experience be limited to the comparatively few students who attend small residential colleges, or would the field of higher education (and the country as a whole) be richer if the influences of these colleges were experienced by a larger population of students? It could be argued that all students deserve the benefits of close interactions with faculty, meaningful undergraduate research activities, and interdisciplinary program offerings.

Overall, Remaking Colleges is a well-written and interesting account of liberal arts colleges in the United States. Contributing authors describe programs and services at their specific institutions that promote engaged learning and other tenets of liberal education and describe how liberal arts colleges, by virtue of their scale and focused missions, are “well-positioned to lead in developing new approaches for an uncertain future” (p. ix). Individual chapters of the book can be read as stand-alone essays or as part of the larger whole, but the authors tend to repeat similar refrains across sections (e.g., purported demise of the liberal arts, opportunities and costs of technology, the need for interdisciplinarity). Reducing these redundancies would improve the book and its overall readability. That said, given the sheer number of authors whose work is included in this volume, the editors do a commendable job presenting a comprehensive view of liberal arts education in the 21st century.

**REFERENCES**


**About the Author**

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**THE STUDENT LOAN MESS: HOW GOOD INTENTIONS CREATED A TRILLION-DOLLAR PROBLEM**


In *The Student Loan Mess*, Joel and Eric Best utilize their expertise in the fields of sociology and economics, respectively, to explore the student loan crisis in the United States. The authors argue that the crisis is not a single event but
Leadership Lessons: Vision and Values for a New Generation

If the finest voices in higher education were gathered together in one room to discuss leadership, what would you learn? *Leadership Lessons: Vision and Values for a New Generation* took that notion to create a compilation of 22 articles on the topic of leadership, written by today's leaders in higher education. Filled with unique kernels of wisdom, each chapter shares the authors' visions and values in ways that inspire, motivate, and illustrate how to be an exceptional leader. Authors include many who have worked in the registrar's office for decades to others with varied backgrounds in theater, student activism and German literature. This is a book you will want to share with colleagues, friends and employees; all of whom will benefit from the lessons learned by these remarkable, wise and fascinating professionals.

AACRAO’s Professional Development Guidelines for Registrars: A Self-Assessment

For nearly 40 years, AACRAO has published the Self-Assessment, and this 185-page update will provide a cost-effective and simple way to evaluate your office operations by stimulating thought, encouraging self-reflection, and evaluating policies and procedures. The Assessment is arranged by topical area with chapters addressing most basic registrar functions. Within each chapter are Basic Principles, which provide a foundation for the discussion topic and guide the development of the questions that follow. The questions give direction, evoke thought, and allow for a variety of approaches to a given topic. Action Plan items are provided to expand your expertise and allow more in-depth study of a topic. Finally, a Further Reading section has been added to the end of each chapter to direct the reader to useful resources on the topics discussed.
rather a series of crises that have occurred over the past 70 years. Best and Best use the phrase “student loan mess” to express the conditions related to each unique crisis, including society’s ever-evolving definition of the problem and attempts to resolve it. The authors state, “As each successive mess attracted attention, social policies were invented, reformed, or replaced to address the current vision of the student loan problem” (p. 7). Despite being well-intended, these policies inevitably set the stage for a crisis to follow.

According to Best and Best, a broad set of commonly held assumptions affects lending practices and drives social policies related to higher education in the United States. These include the following:

- Higher education is a good thing and should be encouraged: The more educated the nation’s population, the better.
- Because individuals who choose to pursue more education benefit directly, they should bear most of the costs of that education.
- Federal loan policies should not discriminate among education institutions; young people should be free to choose what and where they want to study, and they should be eligible for student loans to attend any school that will admit them.
- Federal loan policies should not discriminate among borrowers. All students should have access to loans on essentially the same terms (pp. 11–12).

The authors note, however, that failing to critically examine these assumptions has contributed to a higher education system that continues to produce disappointing results. Therefore, the goal of this book is investigate previous student loan messes in order to contextualize future actions.

THE FIRST STUDENT LOAN MESS

Best and Best suggest that the first student loan mess occurred between 1958 and 1972—a period of great transition in the United States when assumptions about access to higher education drove policy-making decisions. Specifically, the GI Bill of 1944 was a pivotal moment that redefined the federal government’s role in relation to higher education. Although education payments were only a minor component of the original GI Bill, they “established that the federal government might—even should—support individuals’ efforts to gain higher education” (p. 25).

Three subsequent legislative actions further changed the political and fiscal landscape of higher education in the United States: the National Defense Education Act of 1958, the Higher Education Act of 1965, and the Student Loan Marketing Association (Sallie Mae) in 1972. According to the authors, these policies were predicated on two conditions: individuals wanting more education, even as it became more expensive, and leaders’ desire to provide the financial resources necessary for students to seek educational opportunities.

The National Defense Education Act (NDEA) was established in reaction to the Soviet launch of Sputnik in 1957 and provided justification for a federal student loan program. This program was initially designed to support students in the fields of science, math, engineering, and modern languages but was gradually expanded to benefit more students. As a result of the NDEA, “The federal government had now become committed to providing student loans, which set the stage for less restrictive policies” (p. 29).

Similarly, the Higher Education Act of 1965 (HEA) was originally intended to provide financial resources to low-income students. While the bulk of the budget was designated for scholarships and work-study programs, a small portion was also used to establish guaranteed student loans. The HEA enabled the federal government to use its funds to make the lending of money to students more attractive to bankers. According to Best and Best, “The student loan program became particularly important because it offered federal aid to the middle class” (p. 34) and thereby shifted Americans’ perception of higher education from a privilege for the wealthy toward a right for everyone.

Finally, in 1972, the Student Loan Marketing Association (Sallie Mae) helped lenders meet the soaring demand for student loans (the primary market) by infusing government-guaranteed debt into the capital market (the secondary market). Banks loaned money to students and then sold the loans to Sallie Mae. In turn, Sallie Mae sold bundles of student loan debt on the open market as long-term investments. While the creation of Sallie Mae addressed the first student loan mess, it also laid the groundwork for the second student loan mess.

THE SECOND STUDENT LOAN MESS

Best and Best suggest that the second student loan mess occurred between the mid 1960s and 1998 and was marked by
increasing rates of default on student loan debt. Three interrelated conditions contributed to student defaults: an ever-larger share of young people attending college, an increase in the cost to attend college, and a growing number of students who relied on student loans to pay for college (p. 49).

In response to mounting financial obligations, many students were tempted to clear their student loan debt by declaring bankruptcy. Yet bankruptcy posed a considerable risk to the student loan program. In 1976, Congress amended the HEA of 1965 so that students could not declare bankruptcy during the first five years of student loan repayment. Congress extended this to seven years in 1990, and in 1998, it made student loan debt non-dischargeable through bankruptcy. According to Mettler (2014), this stipulation in the 1998 reauthorization of the HEA, as well as other policies designed to protect special interests (i.e., lenders), not only failed to expand access to higher education but also contributed to a system that exacerbated social inequality by amplifying financial disparity. Samuels (2013) describes this policy as producing a “generation of indentured students” (p. 8).

Despite growing concerns about student loan defaults, there was general reluctance to restrict access to student loans because “those borrowers who were most at risk of defaulting could also be characterized as the most socially vulnerable, those who most needed the government’s help” (p. 61). Further, guaranteed student loans had become extremely popular among the middle class; politicians thus were unwilling to reduce or eliminate the program for fear of disenfranchising their constituents. Both of these circumstances demonstrate the contradictory forces that defined the second student loan mess: Even as legislators were trying to discourage student loan defaults, they were simultaneously making it easier for more students to borrow larger sums of money (p. 59). These conditions set the stage for the third student loan mess.

THE THIRD STUDENT LOAN MESS

According to Best and Best, the third student loan mess began in the mid 1990s and was characterized by crushing student debt. Limits on student loans were not keeping up with the increasing cost of college; loans became difficult to pay off as economic growth slowed for the middle class; and regulations were increased in response to historic student loan default rates (pp. 78–80). The situation was exacerbated by decreasing state support for higher education and increasing rates of unemployment and under-employment among new graduates.

Attempts by Congress to improve the student loan program proved fairly unproductive. Nevertheless, they drew attention to corruption and inefficiency in the guaranteed loan program, including questionable relationships between private lenders and colleges. Best and Best contend that despite repeated attempts to reform the student loan system, the federal government has been unable to address the underlying issue of the increasing cost of higher education even as more students are seeking its benefits (p. 97).

THE FOURTH STUDENT LOAN MESS

Beginning in the mid 1990s, for-profit institutions reaped enormous profits through federal financial aid even though the vast majority of students were dropping out before graduating (p. 107). In order to succeed financially, for-profit institutions must enroll—not graduate—students who have student loans, GI benefits, and other federal funds (p. 118).

Students enrolled at for-profit institutions are considered to be at high risk of dropping out because of their typically poorer academic credentials and fewer financial resources. Such students rely heavily on federal loans at amounts greater than those taken out by their peers who are enrolled at public and private not-for-profit institutions. Because the majority of students who enroll at for-profit institutions fail to graduate, they find themselves with little education but substantial student loan debt. According to Bok (2013), a significant number of these students eventually default on their federally guaranteed loans.

Best and Best describe this as a “race to the bottom” (p. 117) in which taxpayers are “transferring debt straight to those least likely to be able to repay it, while simultaneously sending money directly to the coffers of for-profit institutions that are admittedly failing a majority of their students year after year” (p. 110). The authors suggest that the explosive growth of for-profit institutions in years past appears to be tapering off due to tighter federal regulations and increased competition among public and private not-for-profit institutions for online students. While the long-term consequences of the fourth student loan mess are still unknown, the potential for future student loan messes remains quite real.
LOOKING AHEAD
According to Best and Best, higher education shows all the signs of an industry-wide downturn: higher costs, increasing debt loads, and questionable future demand for services (p. 150). Simply stated, the system is at a breaking point. The authors describe a system of institutional codependency in which “students depend on access to government loans; colleges depend on students getting these loans; and the government depends on good behavior [repayment] from student borrowers and colleges” (p. 156). Best and Best suggest that the federal government’s piecemeal approach to addressing student loan messes has allowed some problems to be solved even as the overall student loan crisis has worsened. They recommend that rather than focus on one student mess after another, the crisis should be considered from a broader frame of reference.

The underlying problem with the current system of student lending is that it treats all student borrowers the same despite real inequalities in their abilities, resources, and prospects for future employment. Best and Best state, “Policies that pretend there are no differences in risk, coupled with rising college costs and ever more higher-risk students entering higher education, virtually ensure that defaults will continue to rise” (p. 164). While modest proposals for reform have been made, most have been opposed by individuals or groups who fear that changes will not be in their best interest. Best and Best contend that if we as a society want to keep our current system of higher education, then everyone will have to make sacrifices.

The authors offer fifteen recommendations that would positively contain or effectively reduce the current student loan problem. They acknowledge that the recommendations are controversial and more likely would encounter resistance. But without significant changes, the problem will continue to grow. The recommendations address all stakeholders (i.e., colleges and universities, the federal government, students, students’ families) and include ideas such as reducing non-instructional costs, restricting federal support for poor-performing colleges (i.e., those with low retention and graduation rates), and adopting more accurate accounting methods. The authors also suggest that students and families should be encouraged and even offered incentives to save for college. “Borrowing should be viewed as a worst option, not a first choice” (p. 177).

Best and Best acknowledge that society’s preference to focus on messes rather than on solving the larger problem is not surprising; messes and social policies are easier to comprehend and promote when they address narrowly defined concerns. Ignoring the larger problem, however, is not a reasonable option. The authors conclude, “If we want to promote higher education in the United States, then we need to find a better way to pay for it” (p. 179).

SUMMARY
The Student Loan Mess is a thought-provoking and sobering account of the U.S. higher education system and the social policies that have been enacted over the past 70 years in support of it. The authors describe the historical markers as well as the policies’ social context—for example, society’s changing attitudes toward credit. Further, they provide compelling evidence to demonstrate Americans’ unwillingness or inability to consider the implications of a total student loan debt that already exceeds $1 trillion. If changes are not made, this figure is likely to exceed $2 trillion by 2020 (p. 157). This book should be of interest to a wide audience of readers—not only individuals who work in higher education, but all taxpayers. Ultimately, it is the taxpayers who will be held responsible for the financial legacy of these policies.

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CODES OF CONDUCT IN ACADEMIA
Reviewed by Janelle Perron Jennings

Historically, student services practitioners have researched, written, and followed codes of conduct in their work with college students. One of the earliest calls for
a code of conduct was in *The Student Personnel Point of View* (American Council on Education 1937), which described the scope of the emerging field of student affairs. Although the document primarily sought to define the effect of higher education on student development and to describe practitioners' roles in encouraging and cultivating such development, it also discussed how practitioners might conduct themselves in order to better assist students in transition. Because the relationship between staff and students was an important part of the college experience, practitioners were expected to cultivate such relationships. In an effort to clarify boundaries for relationships between students and staff, college and university presidents were asked to “set the standard of such mores” by stating their expectations for the professional conduct of university employees (American Council on Education 1937). Modern standards for the field of student services have been articulated by such national associations as the American Association of Collegiate Registrars and Admissions Officers (AACRAO 2009), NASPA: Student Affairs Administrators in Higher Education (1990), and the Council for the Advancement of (2006). These standards help practitioners measure their professional conduct and establish expectations for individual functional areas such as admissions, judicial affairs, and academic advising.

Student services is not the only discipline in higher education that continually develops professional codes of conduct. Faculty are guided by the American Association of University Professors’ “Statement on Professional Ethics,” first drafted in 1966 and revised in 2009. Many boards of trustees adopt codes of conduct in order to clarify members’ responsibilities, define conflicts of interest, and affirm the importance of honesty and transparency in their work (Minnesota State Colleges and Universities 2003, University of Massachusetts 2003, Virginia Commonwealth University 2013).

In an effort to address areas of academe that might lack formalized ethical standards, Braxton and Bray (2013) edited a special issue of *New Directions for Higher Education* called “Codes of Conduct in Academia.” The text focuses primarily on standards of conduct for different roles in higher education, such as academic deans, graduate students, and fundraising professionals. The authors describe the transactional relationship that employees have with those they serve and affirm that ethical standards help protect this relationship and keep it intact. Having ethical principles can also help eliminate some of the ambiguity inherent in many positions in the academy by encouraging faculty and staff to create “mechanisms of social control” (Braxton and Bray 2013, p. 2). Codes of conduct enable incidents of wrongdoing to be addressed more effectively because they represent norms that have been agreed upon and that identify repercussions for misbehavior. The creation of such codes, their implementation, and possible challenges are discussed so that anyone seeking to create new codes or to revise old ones can make informed decisions throughout the process.

“Codes of Conduct in Academia” examines ethical principles in several functional areas in order to help guide professionals’ practice. For example, in the chapter entitled “Toward a Code of Conduct for the Presidency,” Fleming states that for university presidents, clear boundaries must be outlined as early as the selection process. Such parameters should incorporate the institution’s mission and values and align with universal beliefs and expectations related to the office. These parameters are necessary because presidents are hired to handle myriad tasks yet receive minimal training and support. In the third chapter, “Follow the Code: Rules or Guidelines for Academic Deans’ Behavior?” Bray notes that academic deans’ responsibilities are similar to those of presidents in that their work pertains to policy, tenure, and research and requires extensive collaboration with administrators, faculty, and students. A code of conduct is important for deans because of the inherent responsibilities and frequency of turnover in the position. In order to serve effectively, incoming deans need to know what is expected of them and what the professional parameters are. In this case, the author argues, the code of conduct serves not only as a guideline for performance but also as a repository of institutional knowledge that can be passed from one dean to the next.

Many of the chapters of “Codes of Conduct in Academia” make similar recommendations. However, in Chapter 4, “A Normative Code of Conduct for Admissions Officers,” Hodum suggests a unique approach: a variety of statements created by professional organizations can be used to guide admissions officers’ ethical behavior. Given the lack of centralized standards for this particular role, professionals may pick and choose guidelines according to their organizational membership. A more stream-
lined approach would involve the setting of standards by each state’s higher education commission and the consequent creation of a code of conduct for all institutions within the state. Regional accrediting agencies could use these guidelines to ensure that admissions officers act in the best interests of students, not institutions.

The final chapters of “Codes of Conduct in Academia” discuss the challenges and possibilities inherent in creating and enforcing codes of conduct across the university landscape. Challenges include the creation of an ethical code and the application of such a code to professional behavior. In their chapter entitled “Organizational Constraints and Possibilities Regarding Codes of Conduct,” Bray, Molina, and Swecker point out that such codes can be more symbolic than practical, resulting in guidelines that are difficult to enforce (p. 79). Organizational culture is also a challenge to established codes of conduct in so far as an institution’s leadership dictates whether the code is honored and used as a guidepost for professional behavior. Unethical behavior can persist in an organization with an established code of conduct that is not affirmed and modeled by campus leaders. Conversely, institutions that uphold codes of conduct can confront unethical behavior in the community and can rally students, faculty, and staff around shared values. Such values may permeate the campus climate, creating opportunities for dialogue and positive change that inform and define the campus culture.

“Codes of Conduct in Academia” is a helpful tool for university faculty and staff who seek to implement or revise ethical standards on their campuses. It provides specific examples of codes of conduct in many functional areas as well as guidance for those seeking to define professional ethics in academia. The text also describes potential pitfalls for individuals actively engaged in such work and suggests some ways to avoid those pitfalls. While many of the chapters describe similar approaches to crafting ethical standards, there are enough fresh ideas to make the text valuable to practitioners. While not expansive enough to serve as the definitive text on the subject, the slim volume nevertheless should prove useful to committee members charged with creating or revising a code of conduct. It would also be a helpful addition to any practitioner’s reference library.

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