Literature on teaching and learning in college classrooms is reviewed and findings are discussed through a generational lens. From assumptions about generations of students, recommendations for enhancing student learning—especially for Millennial students—are provided.

Teaching, Learning, and Millennial Students

Maureen E. Wilson

A growing body of literature has focused on improving undergraduate education and teaching. In classrooms and beyond, educators can create environments and experiences to enhance student learning and engagement. Among the many recommendations for improving teaching and learning, Barr and Tagg (1995) encouraged a paradigm shift from emphasizing teaching to emphasizing learning. In the learning paradigm, the mission and purpose of education is to produce learning, not to deliver instruction. Rather than faculty being primarily lecturers, they are designers of learning methods and environments. This shift is consistent with the principles that are described next.

On the basis of fifty years of research on teaching, Chickering and Gamson (1987) published Seven Principles for Good Practice in Undergraduate Education. These good practices (1) encourage contact between students and faculty, (2) develop reciprocity and cooperation among students, (3) encourage active learning, (4) give prompt feedback, (5) emphasize time on task, (6) communicate high expectations, and (7) respect diverse talents and ways of knowing. These principles, in combination with other research, can help those interested in enhancing teaching effectiveness with the Millennial generation.

Elements of Effective Teaching

Using Chickering and Gamson’s principles as a framework, I examine strategies for teaching in light of Millennial student characteristics.
Student-Faculty Contact. Many scholars emphasize the importance of student-faculty contact in higher education (Braxton, Eimers, and Bayer, 1996; Chickering and Gamson, 1987; Guskin, 1994; King, 2003). Frequent student-faculty contact can enhance students’ motivation, involvement, and intellectual commitment, encouraging them to think about their own values and future plans (Chickering and Gamson, 1987). However, it is the quality of the contact, not the quantity, that matters (Cross, 1999; Kuh, 2003). Cross (1999) suggested that more successful students may be more likely than less successful students to seek contact with faculty and reap the benefits, and that perhaps “faculty who invite frequent student contacts are more likely to be the kind of people who stimulate educational satisfaction than faculty who are not so easily approachable” (p. 264). She argued that we know, from a combination of research and experience, that “when faculty show an interest in students, get to know them through informal as well as formal channels, engage in conversations with them, [and] show interest in their intellectual development, then students respond with enthusiasm and engagement” (p. 264).

According to Kuh (2003), “student-faculty interaction matters most to learning when it encourages students to devote greater effort to other educationally purposeful activities during college” (p. 29). Substantive contact between students and faculty is what matters, and most goals do not require extensive contact. For instance, discussing career plans with faculty or working with them on a project or committee outside of class could happen just once or twice a year. Joining a professor on a research project once during college could have a major impact on a student. Other activities need to happen much more frequently: receiving prompt feedback, discussing course requirements and grades, and discussing ideas outside of class (Kuh, 2003).

One important step in building relationships with students is to know them by name and seek informal contact with them. Because only 35.6 percent of entering first-year students estimated chances were very good that they would communicate regularly with professors (Sax and others, 2002), faculty may need to take the lead in establishing norms that facilitate connections with students. Those Millennials who had a sheltered upbringing and parents who advocated for them will need to learn how to deal with authorities and advocate for themselves.

Reciprocity and Cooperation. Chickering and Gamson (1987) argued that working with others can increase involvement in learning and that discussion can improve thinking and deepen understanding. Described as team-oriented (Howe and Strauss, 2003), many Millennials grew up working in groups and playing on teams. Might they consequently face difficulties in learning to think independently and articulate their positions? Although anecdotal reports indicate that students prepare less for classes using group work and rely on peers to help them, Kuh (2003) suggested that this phenomenon can be minimized by incorporating peer evaluation,
grading individual contributions to group projects, and observing group activities.

One aspect of reciprocity and cooperation is to consider a class as a group and address the dynamics therein. Teaching and learning are influenced by a variety of social factors, including social status (gender, race, age, and social class of students and instructors), role relationships (interaction patterns between and among faculty and students that affect who participates and how), and structural inequalities (power differences between faculty and students and how faculty use or share their authority; Hirschy and Wilson, 2002). Cooperation among students can be promoted by focusing on the social dynamics in a class. Hirschy and Wilson argued that “by anticipating and attending to the social forces that occur in the classroom, faculty better foster student learning and help students achieve their higher education goals” (p. 97).

Fassinger (1995) argued that course design can have the greatest impact of all on class participation. Faculty can cultivate interaction when they create class activities such as study groups and learning partners that foster the positive emotional climate developed when students are “cooperative and supportive and make friends in class” (p. 94). Findings from her research suggested that efforts to develop the students’ confidence are likely to promote participation in class. Students fear appearing unintelligent to their peers and professors, thus hampering participation. Therefore, promoting norms for classroom interaction and having discussion that helps to develop empathy for classmates can increase involvement; “facilitating students’ willingness to raise questions or offer comments in class is likely to enhance their intellectual development” (Fassinger, 1995, p. 82).

Millennial students are described as cooperative team players (Howe and Strauss, 2000). They have likely experienced more cooperative and collaborative learning environments prior to college. This could bode well for their willingness and ability to work with peers in college classrooms to enhance learning.

**Active Learning.** Cooperative and collaborative learning are two forms of active learning, another of the seven principles. McKeachie (2002) argued that “discussion methods are superior to lectures in student retention of information after the end of a course; transfer of knowledge to new situations; development of problem solving, thinking, or attitude change; and motivation for further learning” (pp. 52–53). In contrast to listening to lectures, memorizing information, and repeating it on exams, students reap greater benefits when they engage with material, relate it to their experiences, and apply it to their lives (Chickering and Gamson, 1987). Guskin (1994) argued that the passive lecture-discussion format so common for undergraduate students is contrary to most principles for promoting optimal student learning.

To promote learning, students need to be engaged and involved. Cress and Sax (1998) cited research indicating that an increasing number of faculty
are using student-centered pedagogy and active learning strategies. Fewer lectures and more discussions, cooperative learning, and group projects are examples of more engaging approaches to teaching; “active learners tend to be more tolerant of new ideas, are able to develop multiple ways of solving problems, work collaboratively with other students, and are self-motivated” (Cress and Sax, 1998, p. 76). The team orientation of Millennials ought to work well with active learning strategies, among them cooperative and collaborative learning.

**Feedback.** Most reports on enhancing undergraduate education emphasize the importance of frequent, prompt, and constructive feedback to students (Braxton, Eimers, and Bayer, 1996). Chickering and Gamson (1987) stressed that students need opportunities to reflect on their learning and how to assess themselves. In arguing that “how individuals construct knowledge and use their knowledge is closely tied to their sense of self,” King and Baxter Magolda (1991) wrote that students’ ability to hear and respond to suggestions and criticisms depends on their cognitive complexity and emotional maturity. Therefore, educators must provide feedback according to the needs and abilities of a particular student and “understand the role of support in the developmental process” (p. 602).

All students can benefit from timely feedback, delivered effectively, to help them learn. More frequent quizzes and smaller assignments can provide feedback to students and faculty and reduce the pressure of succeeding or failing on the basis of a few heavily weighted examinations. It also creates a greater variety of formats that can play to the different strengths of students and encourage others to develop new academic skills. This feedback can also assist students who are striving to meet high expectations and may also increase their time on task—two more of the seven principles.

**Time on Task.** Another principle of good practice emphasizes time on task. Highly involved and scheduled, Millennial students have been shuttled to activities and lessons with very little free time and may continue to join numerous clubs and organizations on campus. Students must devote adequate time and effort to educationally purposeful activity to enhance learning (King, 2003). One measure of this is the amount of time students devote to studying. Students expect to study more often in college than high school, and they do. Their time doubles in college to about twelve hours per week, but this means that most students are only spending about half of the commonly recommended study time of two hours outside of class for every hour in class (Kuh, 2003).

It appears that Millennial students experience academic success in high school with relatively little effort (Sax, 2003). In the Higher Education Research Institute’s annual survey of first year students, 45.7 percent reported average high school grades of A+, A, or A− and 49 percent reported a B+, B, or B− average. More reported A+ or A than B. Most respondents (60.2 percent) “believe there is a ‘very good chance’ that they will earn
at least a B average in college” (Sax, 2003, p. 17). Most studied little during their senior year; 37.9 percent spent two hours or less, 28.6 percent spent three to five hours, and 33.4 percent spent six or more (Sax and others, 2002).

Kuh (2003) said there is no substitute for time on task: “[Time on task] is even more important if we think of engagement as a valued end in itself. College is a potentially transforming experience, a once-in-a-lifetime opportunity to challenge students to examine their previous ways of knowing, thinking, and behaving. It’s hard to imagine this happening to a meaningful degree if students don’t devote the time and effort needed to develop the habits of the mind and heart characteristic of an educated person” (p. 28).

Although Millennials are described as confident and achieving (Howe and Strauss, 2003), there is a disconnect between aspirations and efforts. Therefore, one goal of educators should be to assist students in developing realistic expectations of the amount and quality of effort required to be academically successful, especially if they want to meet another goal of graduate school. Nearly three-quarters of participants in the 2002 Higher Education Research Institute study reported planning to pursue a graduate degree, including 17.4 percent desiring a Ph.D. or Ed.D.

**High Expectations.** When teachers and institutions expect students to perform well, it becomes a self-fulfilling prophecy for students, who are likely to exert more effort to meet expectations (Chickering and Gamson, 1987; Kuh, 2003). Conversely, low expectations are usually met with low effort and performance. Millennials who were closely monitored, sheltered, and pushed to excel have faced academic pressure via testing and accountability procedures promulgated by Baby Boomers. Having been “taught to the test,” students need to learn to think critically and with more complexity than some of them have done in the past.

Kuh posited that “students will go beyond what they think they can do under certain conditions, one of which is that their teachers expect, challenge, and support them to do so. Students read and write when we demand it” (p. 28). The work required to meet high expectations combined with prompt feedback and other effective teaching practices results in more learning.

However, high expectations require more time from everyone, violating the “disengagement compact” (p. 28)—a bargain struck between professors and students to leave each other alone. Instead, students must work harder to prepare for class and complete assignments, while faculty must devote significant time to grading assignments, providing feedback, and meeting with students to discuss assignments and feedback. Given typical faculty reward structures, especially at research universities, time devoted to teaching competes with other priorities, including research. According to Astin, Keup, and Lindholm (2002), independent liberal arts colleges have shown a larger increase in faculty-student interaction than public and private universities, and this gap has widened during the past decade. Kuh believes there is “a
breakdown of shared responsibility for learning” where faculty do not expect students’ maximal effort and students do not take full advantage of institutional resources (Kuh, 2003, p. 28).

Some signs indicate that students think highly of their abilities and are striving to meet high expectations. According to the annual study of first-year students (Sax and others, 2002), a majority of respondents ranked themselves above average or in the highest 10 percent in academic ability (69.5 percent) and in intellectual self-confidence (60.1 percent). Interestingly, a minority of respondents ranked their writing (46.4 percent) and mathematics (45.2 percent) ability as above average or in the highest 10 percent. Furthermore, 59.7 percent of students reported taking advanced placement courses in high school, and 46.4 percent took advanced placement exams. In 2002, the average SAT math score reached a thirty-two-year high of 516, up 15 points from 1992. Females hit a thirty-five-year high of 500, while the male average was 534. Of female college-bound seniors, 44 percent took precalculus, a rise of 13 percent in ten years. Unfortunately, the average verbal score declined in 2002 and is just four points higher than in 1992. Gaston Caperton, president of the College Board, says that the math scores are the result of efforts to improve math education in the United States. “It is time to put that same kind of concerted energy behind ensuring that students reach their potential as skilled readers and writers,” he said (College Board, 2002, sect. 4). Improving the writing abilities of students requires great effort from students and faculty. It also requires high expectations of faculty and students to be successful.

**Diverse Talents and Ways of Knowing.** Good practice in undergraduate education also respects diverse talents and ways of learning (Chickering and Gamson, 1987). Because students’ talents and learning styles differ, teachers should use a variety of teaching and assessment strategies. Although many assume that learning styles are correlated to race, ethnicity, gender, and culture, King (2003) suggests that this assumption may be premature and based on limited research with college students. She wrote, “Students of all cultural and racial backgrounds should be encouraged to develop learning strategies that are flexible and suited for the specific demands and constraints of the problem at hand” (p. 255). Therefore, teachers who employ active learning techniques, help students develop a variety of strategies for learning, and assist them in determining which ones are likely to be most effective in a particular situation are able to enhance educational outcomes for students.

**Teaching Millennials**

As explained in greater depth elsewhere in this volume, students from the Millennial generation who began arriving on college campuses around 2000 are described as special, sheltered, confident, team-oriented, conventional, pressured, achieving, optimistic and upbeat, accepting of authority, rule
followers, and structured. They had closely supervised upbringings and are smarter than most think, technologically savvy, and becoming more politically conservative, while holding more liberal attitudes toward social issues (Howe and Strauss, 2000, 2003; Rooney, 2003). Howe and Strauss (2003) claimed that Millennials on campus will be close with their parents, very focused on grades and performance, busy in extracurricular activities, eager for community activities, talented in technology, more interested in math and science, less interested in the humanities, demanding of a secure and regulated environment, respectful of norms and institutions, conventionally minded, conformist in thinking, ethnically diverse, and majority female (p. 32). Murray (1997) claims Millennials are more trusting of systems, bred for success, willing to work hard, comfortable with groups, and not very self-reflective; “they will expect us to display authoritative expertise, model effective techniques, stress motivation, invest in their outcomes, celebrate their victories” (p. 42). In light of these characteristics and the principles for effective teaching already addressed here, this section presents recommendations for continuing to enhance opportunities for teaching and learning for Millennial students.

**High Expectations.** Millennials are likely to invest themselves to meet high and clear expectations. Murray (1997) suggested that Millennial students are “better prepared, more confident, and . . . more willing to do what it takes to succeed” (p. 42) than the Generation X students who preceded them. Because they were raised to devote much time and energy to achieving goals and have been rewarded for doing so, he believes they will continue to do so in college. Given how structured their lives have been, they may struggle in the transition to college as they face more ambiguity and a greater call for self-responsibility. They are likely to appreciate clear expectations, explicit syllabi, and well-structured assignments, for example. Desiring to achieve, many will expect detailed instructions and guidelines for completing assignments and knowing what will be covered on tests. What exactly must be done to earn an A? For educators, this presents challenges since learning, growth, and development require increasing complexity in thinking, greater autonomy and reliance on self, and less reliance on authorities. Reliant, cooperative, and compliant Millennials who largely share their parents’ values may be less likely to challenge authority and the status quo. To the chagrin of many, they should be encouraged to do so.

Furthermore, Millennial students who have achieved academic success with relatively little effort may have unrealistic expectations about what is necessary to be academically successful in college (Sax, 2003). Sax suggested that high-achieving students may become demoralized by earning a B or C in college. Therefore, students may require help to improve their study and time management skills and encouragement to meet with faculty. Faculty can “[create] study groups and other forms of collaborative learning” (pp. 19–20) to assist students in meeting high expectations.
Parental Involvement. Many scholars expect an unprecedented level of parental involvement with Millennial students and their colleges. Jacobson (2003) described parents who have been actively involved in their students’ lives, not just delivering their children to activities and events but staying there to cheer for them. It seems unlikely they will suddenly step back now. Howe and Strauss (2003) argued that Millennials have been sheltered. The Baby Boomer parents who put “baby on board” signs in their car windows have also promoted tougher policies for school security, drug enforcement, driver’s licenses, music labeling (for explicit lyrics), and television (warnings for content).

On campus, admissions officials suspect that ever more applications are completed by parents, and some parents threaten lawsuits when admission is denied (Jacobson, 2003). Although some students appear embarrassed when parents grill campus administrators, many expect their parents to play an active role in their college search and experience. Instead of dropping students off at the college residence hall, parents are often invited by colleges to stay for parents’ orientation; some institutions have developed an office for parental relations. Beyond the classroom, parents’ involvement with students is promoted through parental notification policies to inform parents of a student’s drug or alcohol violation. Regarding academics, actively involved parents—or intrusive ones—may be more likely to be actively involved in choosing courses and majors for students, to contact professors about grades, attend hearings for academic dishonesty, and monitor course content, particularly as it relates to controversial issues. Exposure to differing points of view can help students articulate their values and positions on difficult and complex issues, especially when challenged to do so by faculty and administrators.

As Baby Boomer parents have fought successfully for changes in the Family Educational Rights and Privacy Act to allow notification on some student conduct issues, might they also work for greater sharing of academic information? Might more parents begin to contact faculty to monitor student progress? Will it be necessary if students willingly share this information with parents whom they view as personal supports and advocates?

Technology. Students are increasingly savvy when it comes to technology, though not all students will be proficient. Cress and Sax (1998) warned that colleges should address “technologically disadvantaged” (p. 77) students, often first-generation and from working-class families. These students may have less experience with and access to the technologies that many take for granted. Increasing reliance on technology has several implications for teaching. First, most students will expect faculty to incorporate technology into their teaching and to be proficient in using it. At a minimum, communication with faculty via e-mail and access to online resources will be expected. Other technologies such as PowerPoint presentations, Internet activities, online discussions, and electronic classrooms may be available as well. Howe and Strauss (2003) predicted that Millennials will
want to learn how to apply technology to fix social problems such as global warming. However, Grasha and Yangarber-Hicks (2000) emphasize the importance for faculty to develop a conceptual rationale for incorporating technology into their teaching, identifying how it fits with their philosophy of teaching and learning. In other words, technology should not be used for its own sake but rather only if it enhances teaching and learning.

Some campuses have been successful in enhancing student learning through a combination of pedagogical and technological innovations (Twigg, 2002). For example, online quizzes can provide immediate feedback (one of the seven principles) and direct students to material so as to review and improve understanding. Web-based homework that is graded automatically can increase time on task (another principle) by presenting more problems to solve than can be reasonably graded by hand.

As most students will be comfortable with the Internet, they will naturally use it as an academic resource. Faculty, then, must help students evaluate the credibility of those sources (Canada, 2000). The University of Michigan (Irwin, 2003), for instance, has a resource for students to help them learn how to evaluate Web sites. Through a series of questions, students are guided to determine the intention (author’s motivation, point of view expressed, quality and accuracy of content, completeness of coverage), relevance (currency of information), and reliability (authority and authorship) of a site. Using examples from the Internet, faculty could tailor this activity to a particular course, discussing in class the intention, relevance, and reliability of selected sites.

Issues of academic honesty and intellectual ownership also flow from this reliance on the Internet: “The ease of going online has shaped not only attitudes about downloading, but cheating as well, blurring the lines between right and wrong. . . . Students generally know not to buy a paper off the Internet, but many think it is OK to pull a paragraph or two, as long as they change a few words” (Zernike, 2003, p. A6).

Perhaps related to real and perceived pressure to excel, some students are willing to cheat to succeed. Although most students know that quoting sources word-for-word requires a citation, some believe that paraphrasing does not (McCabe, Trevino, and Butterfield, 2001). Furthermore, in a study of academic dishonesty among high school students, McCabe (1999) reported that they felt their teachers were unfamiliar with the Internet and that it was easy to download papers to plagiarize assignments. Those students may continue that perception as college students. To discourage cheating in all forms, faculty should discuss these issues with students, first to promote an environment of academic integrity and second to communicate clear expectations for appropriate academic standards. If it is true that Millennial students are rule followers (Howe and Strauss, 2000), they must first know the rules if they are to follow them. Conversely, Newton (2000) suggested that although students know the rules, they also know how to circumvent them and embrace a “cheating is OK if you do not get caught”
philosophy (p. 12). Although Millennials are not the first generation to cheat and they will not be the last, the fact that many more high-tech opportunities exist to facilitate academic dishonesty creates new challenges for dealing effectively with it.

In a related issue, increasing reliance on electronic resources may make getting students to actually walk into the campus library increasingly difficult. The explosion of online databases along with access to full-text articles makes it tempting to use only resources accessible via computer. As a graduate faculty member, I have seen bright students ignore timely, relevant, and important resources because the full text was not available online or they lacked access to it in that format. One student claimed the library did not own a major journal in her field of study, unaware that bound journals were on the shelves. Informed of this, she was reluctant to go locate and photocopy articles from it.

Another issue related to technology is that an increasing number of students may enroll in online courses that, by design, rely heavily on technology. Indeed, one campus has instituted a requirement that all students take at least one online course each year; others offer hybrid or blended courses—a mix of traditional and virtual classrooms (Young, 2002). Knowlton (2000) argued that online courses should reflect a student-centered paradigm, not a professor-centered one. In contrast to a lecture during which students take notes, a professor in a student-centered classroom “serves as a facilitator while students collaborate with each other and the professor to develop personal understanding of content” (p. 7). The teacher’s role, then, “is to frame the course and supplement student interactions by providing resources and opportunities” (p. 11). By actively involving students, this approach is consistent with Chickering and Gamson’s principles (1987).

Finally, both faculty and students influence the classroom environment; peers have a strong effect on student learning (Hirschy and Wilson, 2002). Therefore, teachers should know about the influence of technology on their relationships with students and among students. Nowhere is the issue more obvious than in online courses, where developing relationships with and among students is especially challenging sans face-to-face contact. Canada (2000) and Weiss (2000) offer suggestions for developing connections in online courses, among them posting brief biographies, scheduling group activities such as a trip to the library, creating a virtual break room for chats, and adding written cues in communications through words or symbols to indicate tone.

**Students with Disabilities.** From 1978 to 1998, the percentage of first-year college students with a disability tripled from 3 percent to 9 percent, and the number continues to grow (National Council on Disability, 2003). Estimates of the number of college students with attention deficit hyperactivity disorder—just one of many learning disabilities—range from 65,000 to 650,000 (Farrell, 2003). A substantial number of students are not diagnosed with a learning disability until college (National Council on
Disability, 2003). Those Millennial students who were diagnosed as children likely had individual education plans in primary and secondary school. They may have received medication at home and school to control their symptoms and academic accommodations such as separate rooms for testing or additional time on tests and assignments. A professional at the National Center for Learning Disabilities said it is crucial for college students to self-advocate and talk with professors about their disability and what assistance they need. This may be new behavior as parents worked with school officials to coordinate those services in high school (Farrell, 2003). Furthermore, faculty need to be educated to work effectively with students with disabilities.

As Farrell (2003) describes, students with learning disabilities face multiple challenges in the move from high school to college. A noisy residence hall and little supervision can replace a quiet home supervised by parents. Lengthy class periods in college can interfere with a short attention span. Variable class scheduling can disrupt routine. Course grades can be determined with a few assignments instead of multiple, shorter assignments that are checked regularly. Parents who keep a close eye on students and are in regular contact with teachers are unlikely to have that access to college professors. As college students must take increasing responsibility for coping with their disabilities (both physical and learning), faculty and student affairs administrators are advised to assist students in the transition as they learn what it will take to succeed in college and beyond.

Every generation of students brings its own history, strengths, and challenges to campus; general group characteristics do not describe accurately or well any individual student. Still, faculty and administrators can anticipate many of the issues likely to affect Millennial students and develop strategies for working effectively with them. Combined with a passion for teaching, the recommendations included here can assist educators in engaging with a new generation of students to promote critical thinking, active engagement, and lifelong learning.

References


Cross, K. P. “What Do We Know About Students’ Learning, and How Do We Know It?” Innovative Higher Education, 1999, 23(4), 255–270.


Maureen E. Wilson is assistant professor of higher education and student affairs at Bowling Green State University in Ohio.