Creating the successful community college student: using behaviorism to foster constructivism

Michael V. Miranda

Dr. Miranda is an Assistant Professor of psychology at Kingsborough Community College of the City University of New York.

The constructivist view of education, though it may be superior to the behaviorist view in some settings, may not be the best way to educate most community college students. These students, a significant number of whom are at a disadvantage in the college classroom as a result of negative past classroom experiences, low levels of academic achievement, and/or poor academic self-esteem, may not benefit from the constructivist models of problem-based, or active, learning. A behaviorally-based program, rejected by some constructivists, has assisted community college students by fostering their academic and social integration.

Introduction

After just eight weeks, students who had spent the first eighteen months of their community college careers sitting silently through their classes determined to avoid eye contact with each of their professors were raising their hands and asking and answering multiple questions in every class hour. This observable benefit of their participation in the behaviorally-based Find Your Classroom Voice Program was no doubt accompanied by increases in their self-esteem, in their enjoyment of their educational experiences, and in the likelihood that they would succeed at their community college and, later, when they continue their education at a four-year institution.

The Program's success at Kingsborough Community College was followed by the encouragement of college administrators to involve more and more faculty and to offer the Program to more students. But an occasional response from some faculty members who were invited to participate in the Program's training was "What? That's *behaviorism*! I can't teach that way! I use superior constructivist methods!"

"Constructivism's central idea is that human learning is *constructed*, that learners build new knowledge upon the foundation of previous learning. Such a view of learning sharply contrasts with one in which learning is the passive transmission of information from one individual to another, a view in which reception, not construction, is the key" (Hoover, 1996, page 1). Although it is a relatively new term, the word *constructivism* is appearing with more and more frequency in journal article titles (Mahoney, 2004), for many educators consider it superior to behaviorism as a foundation for the process of educating students.

For constructivists, this building of "new knowledge" occurs through the student's exploration of his or her world, the discovery of knowledge as a direct result of this exploration, the student's reflection upon that knowledge, and his or her critical review of

this new knowledge leading to its acceptance or rejection. The educator's job is to monitor and guide these learner-centered processes (Stiggins, 2008) whether they are being carried out by individual students or in small-group collaborations (Bodrova & Leong, 2007). Constructivists believe that requiring students to sit still and learn passively, leaving it to the educator to make the decisions regarding what is or is not appropriate for the students to learn, has been the major problem with the educational system in the United States (Silberman, 2006). They also believe that behaviorist principles completely discourage creative and/or critical thinking (Oakes & Lipton, 2007).

The behaviorist, or teacher-centered, approach is rapidly being considered the "old paradigm" (Ahlfeldt, Mehta, & Sellnow, 2005; Johnson, Johnson, & Smith, 1998). Cooper (1993) implies that behaviorism is even older as he describes a paradigm shift that places the educational approach called cognitivism in an intermediary position between constructivism and the "ancient" behaviorism.

There are educators, however, who believe that behaviorism, as it may be applied in classrooms, is neither obsolete nor inferior to constructivism, stating that it can be as valuable as the newer philosophies under certain circum-

stances (Ertmer & Newby, 1993). And while some see a clear dividing line between behaviorist and constructivist principles (Greeno, Collins, & Resnick, 1996; Reynolds, Sinatra, & Jetton, 1996), others deny that such a dividing line exists (Duffy & Jonassen, 1992; Marshall, 1992).

Ormrod (1998), for example, explains that many principles in educational psychology are the products of a combination of two or more educational philosophies and that separating out and identifying the origins of many effective educational ideas is, therefore, impossible. Among these ideas are the following:

- Learners never passively absorb information from the environment but, instead, must always actively work to make sense of their environment and construct their own understandings of the world;

- Learning is more likely to occur when learners are motivated by educators to pay attention to the information to be learned;

- Learners learn more effectively when they are assisted by educators to relate new information to prior knowledge;

- Hints provided by educators about how to think or behave often facilitate performance;

- Learning and development are fostered when learners are challenged by educators

to perform increasingly more difficult tasks or to think in increasingly more sophisticated ways; and

- Learners benefit from hearing or otherwise gaining knowledge of the ideas of educators.

Direct instruction is defined as being a "structured, teacher-centered approach that is characterized by teacher direction and control, high teacher expectations for students' progress, maximum time spent by students on learning tasks, and efforts by the teacher to keep negative affect to a minimum" (Santrock, 2008, page 249). This definition reveals a number of desirable aspects of what some consider to be the obsolete, behaviorism-based, teacher-centered approach. But even if one insists on the overall superiority of constructivism as a classroom philosophy, it can be suggested that, in some circumstances, behaviorist principles may not only enhance the development and success of constructivist principles but, in fact, be a prerequisite for that success.

And a most obvious example of one of these circumstances is the one that is faced daily by the professor in the typical community college classroom.

The role of community colleges in higher education

To appreciate the complexity of pedagogical choices, it is necessary

to understand the role that community colleges play in the education of our nation's young adults and the trends that have developed over the past forty years.

In 1965, fewer than 18% of our nation's college students attended two-year colleges. By 2005, the percentage had increased to more than 37%, with the actual number of students enrolled at two-year colleges increasing by 836% over those forty years (National Center for Education Statistics, 2007);. (see Table 1).

Using data from a sample of 915 community colleges representing all fifty states, Bailey, Calcagno, Jenkins, Kienzl, & Leinbach (2005) report that only 22.4% of community college students in the United States receive their two-year degree from their initial institution within three years of their initial enrollment. Even when one considers the fact that a large number of community college students work at full-time jobs (National Center for Education Statistics, June 2006) and, therefore, might take in excess of three years to obtain their two-year degrees, this degree completion rate is quite unsatisfactory.

It should not come as a surprise, however. At every level of postsecondary education, including the most prestigious of four-year colleges, "graduation rates declined as the size of low-income enrollments increased" (National Center for Education Statistics, October 2006, page 16). And the percentage of low-income enrollments is highest in community colleges, the majority of which have open-admissions policies.

Characteristics of community college students

The low rate of degree completion among community college students, especially given the data regarding the relatively high percentage of college students who attend community colleges, is quite disconcerting. The *Profile of Undergraduates in Education Institutions: 2003-04 With a Special Analysis of Community College Students* (NCES, June 2006) offers some explanations for the low rate of completion. The analysis of the data for the 2003-04 academic year indicates that community college campuses are populated by students who, by virtue of a variety of char-

Table 1. U.S. college enrollment, 1965 and 2005

Year	Total number of college students	Total number at 4-year colleges	Total number at 2-year colleges
1965	4,779,609	3,929,248	850,361
2005	17,487,475	10,999,420	6,488,055

acteristics, would be considered at high risk of failure to complete their degree requirements.

Grubb (1999), for example, reports that community colleges and their open admissions policies attract two groups which significantly reduce the college's graduation rates: a) students with poor academic high school records who still need to learn basic skills before success at college-level work can be expected; and b) students who are not very committed to attending college, choosing a two-year school because they have no other socially-approved way to spend their time.

The typical community college student body consists of historically underserved populations who might not otherwise have attended college at all (Cohen & Brawer, 2003). For example, it is reported that 44% of all Black undergraduate students attend community colleges, as well as 45% of all American Indian undergraduates, and 46% of Hispanic undergraduates. In addition, 47% of community college students come from families in which neither parent ever attended college. Fifty-three percent of community college students are single parents, 57% are 40 years of age or older, and 63% attend classes on a part-time basis. Seventy-nine percent of community college students work an average of 32 hours per week while enrolled, and 41% of these working students work full-time (NCES, June 2006).

Attempts to improve graduation rates at community colleges

While community colleges are doing an excellent job of providing educational opportunities for students who otherwise might not have been able to pursue a college education, they need to improve their record of working with these students toward the completion of their associate's degrees. Several attempts have been, and continue to be, made. Most of these attempts are based on the constructivist philosophy of engaging students to participate in their education more actively through small-group projects (Bean, 2001; Bodrova & Leong, 2007; Hennessey & Evans, 2006), problem-based learning (Ahfeldt et al, 2005; Beers, 2005; Sungur & Tekkaya, 2006), and learning communities (Malnarich, 2005; Raftery, 2005).

But educational philosophies and techniques that work exceedingly well for motivated and/or academically prepared students may fall short when they are applied in a classroom of community college students. Unlike students at four-year colleges, the community college student is likely to arrive in the classroom with deficiencies in three basic areas: a) academic

preparedness (i.e., the level of academic knowledge attained); b) academic skills (i.e., the skills required in order to succeed academically); and c) academic self-confidence, a determinant in how much effort a student makes in the pursuit of his or her degree. It would seem that the teacher-centered, behaviorist approach to education would be better suited than is constructivism to correct for these acknowledged deficiencies of the majority of community college students.

Addressing student deficiencies through behaviorism

There are several reasons why the characteristics of the typical community college student are such that his or her ability to benefit from student-centered constructivist classrooms may be limited. First, we have the well-documented deficiencies in academic preparedness as evidenced by the high proportion of community college students who are required to register for remedial/developmental non-credit courses in reading, writing, and/or mathematics. These students, aware of their academic shortcomings, likely lack self-motivation to search and discover knowledge through exploration without a professor to present information and tasks that are of progressive difficulty. They would benefit most from assignments pro-

vided and graded by the professor, who then makes decisions about the following assignments based on the students' performances on work already completed.

Next, we have the fact that many community college students have not developed academic skills necessary for college success, skills including study habits, note-taking, exam preparation, and, sometimes, even basic classroom behavior. Once again, such areas of deficiency are best corrected through behavioral means by a professor who offers very specific instruction on the steps involved in mastering the classroom environment and its tasks.

Finally, there is the issue of the low academic self-confidence of community colleges students who have lower academic aspirations than students at four-year colleges (Pascarella, Edison, Nora, Hagedorn, & Terenzini, 1998). Without the self-confidence that success on a given task is attainable, an individual will invest less than his or her maximum effort, a way, perhaps subconscious, to minimize the emotional effects of failure. The student who makes less than a full effort in preparing for an exam would be able to say, "What could I expect? I hardly studied" and, in doing so, protect his or her self-esteem. There is an old saying—"Nothing succeeds like success"—which could be

taken to mean that, in order to be successful in the community college, the student must first experience some specific, initial success before overall success is possible. Given the academic shortcomings of the typical community college student, initial success experiences may need to be "engineered" by the professor. Expecting, as the constructivists would, that the student will step forward and make an effort to succeed at a new and challenging task when that student has never had prior success in the academic arena might be too much to ask of the typical student enrolled in a community college.

Using behavioral educational techniques to address these three prevalent deficiencies is a logical and, perhaps, the most efficient approach to bring the skills of students up to a level that would allow them to have meaningful present and future college experiences. A program in place at Kingsborough Community College is based on such techniques.

Program details and class participation outcomes

A review of the various stages of the Find Your Classroom Voice program (Miranda, 2007) and of the method by which faculty members may be trained to use the program (Miranda, 2008) are available elsewhere. Discussed

here are the facts related to the program's primary goals, i.e., to address academic underpreparedness, the lack of academic skills, and the absence of academic self-confidence.

Faculty members who employ the Find Your Classroom Voice Program in one or more of their classes must first identify the two to four students in each class with whom they will be working. For the most part, they will be students who show the motivation and ability to be successful students, but whose behavior is such that they are totally uninvolved in the classroom. The Program's positive results are due in part to a close working relationship between the professor and his or her selected students, making it prohibitive to involve more than three or four students per class. Because the number of Program participants must be limited, it is important to make good choices concerning the kinds of students to whom invitations to participate are offered. There are some interesting differences regarding students' ages and sex: a) between those who accept invitations to participate and those who do not; b) between those who remain in the Program for the entire semester and those who do not; and c) between those who participate on a level that is determined to be "Very Active" (i.e., they demonstrate a consis-

tently improving level of classroom participation on every single class day once the invitation to participate in the Program is accepted) and those who do not.

The small sample study

For the 2006–2007 and the 2007–2008 academic years at Kingsborough Community College, a total of 54 students were invited to participate in the Program. Thirty-nine of these invited students (72.2%) elected to participate—31 of the 40 (77.5%) invited females and 8 of the 14 (45.2%) invited males. Females, even those for whom the community college classroom may not be such a comfortable or inviting environment, seem to be more willing to acknowledge the importance of verbal participation and to accept new challenges designed to increase their participation.

There is also an interesting finding when the students who accept or reject the invitation to participate are compared with respect to their ages. The highest acceptance rate occurs in the "over 30" age group, in which six of the eight invited students (75%) elected to participate. The next highest acceptance rate of 72.7% is seen in the age group of "17 to 19," in which sixteen of the 22 invited students chose to participate in the Program. The acceptance rate for

the age group between these two groups, that which included students from 20 through 29 years of age, was only 62.5%. Only 15 of the 24 invited students in this age group accepted invitations. An interpretation of the data may lead one to believe that the students "over 30" more consistently see the value of overcoming their reticence to participate in group discussions and that the students of the "17 to 19" group might not feel that they actually had the option of refusing an invitation offered to them by a professor. The students in the age group of "20 to 29," however, might have been secure enough to know that the invitation from the professor was just that—an "invitation"—and, as such, it could be rejected while they were not mature enough to see the value of their participation.

As reported by Sorey & Duggan (2008), the variables predictive of adult community college students' academic success which had no bearing when applied to predicting the academic success of traditional-aged community college students were, among other things, social integration and institutional commitment. Each of these variables is strengthened through participation in the Find Your Classroom Voice Program.

The second category of useful data relates to the sex and age differences between those students

who accepted the invitation to participate and who remained as participants through the entire semester and those whose active participation in the Program ceased at some point before the end of the semester. Among the male participants, 37.5% (3 out of 8) dropped out of the Program prior to completion and, among the females 25.8% (8 out of 31) failed to complete the Program. Of note here is that of the eleven participants who did not remain in the Program for the entire semester, nine were in the age group of "17 to 19" (the two outliers were not much older—20 and 22 years of age), supporting the hypothesis that the invited students of the youngest age group had a high rate of acceptance due to their compliance with the professor's request and not due to their interest in and/or their understanding of the value of participating in the Program.

The data on those who were "Very Active" participants also provides some interesting insights. Approximately sixty per cent (60.7%) of all students who elected to participate and who then continued in the Program through the semester participated at the "Very Active" level, regardless of their sex—three out of the five (60.0%) males and fourteen of the 23 (60.9%) of the females. While the sex of the student appears to have no effect on whether or not he or she participates at a high level, the age of the student is inversely proportional to the level of participation achieved. For the youngest age group (i.e., "17 to 19"), 25.0% of those students who accepted invitations to participate did so at the "Very Active" level. For the age groups of "20 to 29" and "over 30," the rates of "Very Active" participation were 46.7% and 100%, respectively. Once again, the percentages indicate that the maturity of the student affects his or her appreciation for the value of the Program and affects his or her level of participation in it.

The basic procedure

Once students accept invitations to participate, the basic procedure is for the professor to pre-plan classroom interactions with each student. Initially, this means that the student is contacted one to two days prior to each class meeting and is at that time informed of the specific question that will be asked of him or her very early during the next meeting of the class. The answer is also provided. The professor states that, should the student raise his or her hand to respond to the question, the student will be called on for the answer. This simple process eliminates the fears that the student might have related to his or her academic underpreparedness, lack

of academic skills, and absence of academic self-confidence because the student knows in advance that the answer he or she will give in class is correct. After performing a scripted interaction for several weeks, the student is ready to move on to more difficult interactions.

For example, the student might not be given the answer to the question, or he or she might be asked a follow-up question after responding with the scripted answer, or the student may no longer be asked his or her assigned question during the first few minutes of the class, and so on. The students in the Program advance through the stages at their own individual rates and only after they have given their permission to increase their levels of challenge, building academic self-awareness and self-confidence through the semester. This process employs the behavioral techniques of classical and operant conditioning, systematic/*in vivo* desensitization, shaping (utilizing the process of successive approximations), and modeling (Miranda, 2008).

Several times during the semester, Program students are invited to attend a group meeting with all participating students in each of the professor's classes. During the meetings, students receive positive reinforcement from their peers and the professor as they develop an awareness of the number of students for whom speaking in class is difficult.

At the conclusion of the semester, participants are asked to complete a seven-item forced-choice questionnaire concerning their participation in the Program. The questionnaire was completed by all thirty-nine students who had accepted original invitations to participate in the Program, regardless of whether or not their participation continued throughout the semester. The first four items address students' feelings about the Program's effectiveness and whether or not any positive results attained generalized to their other classes. A summary of their responses appears below:

1. When I was first invited to participate in the Program, I
   a) immediately felt that the Program would be good for me. (N = 8)
   b) was not sure, but thought that the Program might be helpful for me. (N = 31)
   c) did not think the Program would be valuable for me at all. (N = 0)

2. During the first week or two of my participation in the Program, I
   a) had a great deal of difficulty with speaking in the class. (N = 10)
   b) had some difficulty with speaking in the class, but not as much as in my other classes. (N = 15)

c) found it very easy to speak in the class. (N = 14)

3. By the end of the semester, my difficulties with speaking in this class were

a) completely gone. (N = 16)

b) somewhat less than they were in the beginning of the semester. (N = 23)

c) the same as they were before my participation in the Program. (N = 0)

4. My participation in the Program

a) made it much easier for me to speak in my other classes. (N = 17)

b) made it somewhat easier for me to speak in my other classes. (N = 19)

c) made it easier for me to speak in some of my other classes, but not in all of them. (N = 3)

d) had no effect on my ability to speak in my other classes. (N = 0)

The favorable ratings given by participants who did not complete the program is explained by the fact that although students can recognize strategies that would contribute to their academic success, they often do not employ the strategies (Yazedjian, Toews, Sevin, & Purswell, 2008).

The ability to generalize Program participants' classroom behaviors to other classes for the remainder of their college careers is highly desirable but, as the data indicates, that does not always happen. Dossin (2002) has identified the importance of the personal characteristics of the professor as a determinant of student classroom participation.

Student engagement outcomes

Student engagement, when defined as the personal connection between student and academic subject matter, has been shown to be responsible for good grades, persistence, and graduation rates (Astin, 1993; Kuh, 2001, 2003; Pascarella & Terenzini, 2005; Zhao & Kuh, 2004). Positive academic outcomes are also achieved when student engagement is defined as formal and/or informal faculty-student contact (Astin, 1993; Ewell & Jones, 1996; Halawah, 2006; Kezar, 1999; Kuh, 2001; Pascarella, 2001; Tinto, 1993, 2000; Zea, Reisen, Beil, & Caplan, 1997) that occurs frequently (Terenzini & Pascarella, 1980), and focuses on academic topics (Iverson, Pascarella, & Terenzini, 1984).

A study of more than 11,000 students attending eighteen different colleges has supported the findings of many earlier studies indicating that student engagement has positive, statistically

significant effects on grades and persistence between the first and second years, especially for students from different racial and ethnic backgrounds (Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008), supporting the suggestion that any interventions designed to assist the academic performances of community college students must be implemented early in the students' academic careers (Flowers, 2006). Cruce, Wolniak, Seifert, & Pascarella (2006) conclude that student engagement compensates for the academic disadvantages of "historically underserved students," especially for students who enter college being academically underprepared, as the first in their families to attend college, and/or from families with low incomes.

The Find Your Classroom Voice Program, in addition to using behavioral techniques to engage students with academic material, uses the behavioral principles of both positive and negative reinforcement to allow students to benefit from regular, in-class and between-class contacts with the participating professor. The encouragement and support that the student receives from the professor with each telephone or email contact (i.e., positive reinforcement) along with the elimination of the anxiety that the student had previously experienced with the thought of interacting with a faculty member, speaking in class, and/or providing an incorrect response to a question in class (i.e., negative reinforcement) all serve to foster a personal relationship with the professor that these students have most likely never had.

The last three items on the seven-item forced-choice questionnaire address the degree of academic and social integration that was fostered by the students' participation in the Program. A summary of the results of these items follows:

5. My participation in the Program made me feel
   a) much more connected to the subject that I was studying. (N = 34)
   b) somewhat more connected to the subject that I was studying. (N = 5)
   c) no more connected to the subject that I was studying than usual. (N = 0)
6. My participation in the Program made me feel
   a) much more connected to other students in the class. (N = 15)
   b) somewhat more connected to other students in the class. (N = 17)
   c) no more connected to other students in the class than usual. (N = 7)

7. My participation in the Program made me feel

   a) much more connected to the professor as a person. (N = 34)

   b) somewhat more connected to the professor as a person. (N = 5)

   c) no more connected to the professor as a person than usual. (N = 0)

With these responses, along with the data connecting academic and social integration to persistence and success, a case can be made for the Find Your Classroom Voice Program having a positive impact on community college students. Participation not only creates significant behavioral change but also enhances the students' probability of graduating as a result of improving their connections with their professors, their peers, and the academic material being studied. Why, then, would some "constructivisitic" professors reject the Program?

Behaviorism, constructivism, and teacher education

As expected, there has been a shift away from behaviorism and toward constructivism in teacher education (Richardson, 1996) as teachers attempt to avoid transmitting knowledge to their students in favor of having students construct knowledge for themselves. In the classroom, however, the shift is more difficult to identify.

Woolley & Woolley (1999), in their study of approximately 200 working teachers and student teachers, discovered that student teachers were much more likely than working teachers to place themselves very strongly in either the behaviorist or the constructivist "camps." With experience, working teachers evolve into a combination of being behaviorist in some areas and constructivist in others. Consequently, the question of whether it is actually possible to be totally "constructivist" and to maintain that attitude over time and with experience may be raised.

When asked to explain why their beliefs in constructivism were so strong, student teachers identified four factors. The factors were "their teacher education program, their memories from being a student, their experiences as a parent, and their association with parents or relatives who are teachers" (Woolley, Woolley, & Hosey, 1999, page 7). What we might glean from these facts is that: a) education-oriented, successful students are most likely to be the ones who enter teaching as a profession; b) education-oriented, successful students assume that all students are similar to themselves; and c) education-oriented, success-

ful students who become teachers assume that the manner in which they learned in the classroom is the best way for every student to learn. But these assumptions break down early and severely when a classroom is occupied by unmotivated, underprepared, fearful students. Under those circumstances, constructivist principles lose any advantage that they might otherwise have over the behaviorist philosophy. In fact, Woolley, Woolley & Hosey (1999) also report that in the course of their working with experienced teachers, student teachers who previously identified themselves as being staunchly constructivist in their views toward education learn to appreciate the need for textbooks to guide student learning, the effectiveness of behaviorist principles for classroom management, and the use of teacher-directed educational strategies based on behaviorism.

Conclusion

The outright rejection of behaviorally-based educational programs by professors who view themselves as constructivists would seem to be a mistake, especially when they are assigned to classrooms that contain students who may be uncommitted to their educations, unmotivated to invest the effort that would lead to positive results, and/or unprepared for the level of academic material to which they will be exposed. The short- and long-term harm that constructivist practices will do to students in any of these categories is immeasurable, as is the harm that is done by educators who consistently adhere to constructivist principles when teaching all varieties of students.

There are innumerable variables that will have an impact on the academic success of community college students and further research is needed to identify and address these variables. Even so, more educators should consider behaviorism as the foundation for educating the typical community college student. Once the student's academic preparedness, academic skills, and academic self-esteem have improved, then constructivist practices can be introduced.

References

Ahlfeldt, S., Mehta, S., & Sellnow, T. (2005). Measurement and analysis of student engagement in university classes where varying levels of PBL methods of instruction are in use. *Higher Education Research & Development, 24*(1), 5 – 20.

Astin, A. W. (1993.) *What matters in college? Four critical years revisited.* San Francisco: Jossey-Bass.

Bailey, T., Calcagno, J. C., Jenkins, D., Kienzl, G., & Leinbach, T. (2005.) *The effects of institutional factors on the success of community college students.* New York: Teachers College, Columbia University, Community College Research Center.

Bean, J. C. (2001.) *Engaging ideas: The professor's guide to integrating writing, critical thinking, and active learning in the classroom.* San Francisco: Josey- Bass.

Beers, G. W. (2005.) The effect of teaching method on objective test scores: Problem-based learning versus lecture. *Journal of Nursing Education, 44,* 305 – 309.

Bodrova, E., & Leong, D. J. (2007). *Tools of the mind* (2nd ed.). Geneva, SWIT: International Bureau of Education, NESCO.

Cohen, A. M. & Brawer, F. B. (2003.) *The American community college* (4th ed.). San Francisco: Josey-Bass.

Cooper, P. A. (1993). Paradigm shifts in designed instruction: From behaviorism to cognitivism to constructivism. *Educational Technology, 33*(5), 12 – 19.

Cruce, T., Wolniak, G .C., Seifert, T. A., & Pascarella, E. T. (2006.) Impacts of good practices on cognitive development, learning orientations, and graduate degree plans during the first year of college. *Journal of College Student Development, 47*(4), 365 – 383.

Dossin, M. M. (2002.) Why won't they talk? *College Teaching, 50*(1), 3.

Duffy T. M. & Jonassen, D. H. (1992). Constructivism: New implications for instructional technology. In T. M. Duffy & D. H. Jonassen (Eds.), *Constructivism and the technology of instruction: A conversation.* Hillsdale, NJ: Erlbaum.

Ertmer, P. A. & Newby, T. J. (1993). Behaviorism, cognitivism, constructivism: Comparing critical features from a design perspective. *Performance Improvement Quarterly, 6*(4), 50 – 72.

Ewell, P. & Jones, D. (1996.) *Indicators of "good practice" in undergraduate education: A handbook for development and implementation.* Boulder, CO: National Center for Higher Education Management Systems.

Flowers, L. A. (2006.) Effects of attending a two-year institution on African American males' academic and social integration in the first year of college. *Teachers College Record, 108*(2), 267 – 286.

Greeno, J. G., Collins, A. M., & Resnick, L. B. (1996). Cognition and learning. In D. C. Berliner & R. C. Calfee (Eds.), *Handbook of educational psychology.* New York: Macmillan.

Grubb, N. (1999.) *Honored but invisible*. New York: Routledge.

Halawah, I. (2006.) The impact of student-faculty informal interpersonal relationships on intellectual and personal development. *College Student Journal, 40*(3), 670 – 678.

Hennessey, D., & Evans, R. (2006.) Small-group learning in the community college classroom. *The Community College Enterprise, 12*(1), 93-110.

Hoover, W. A. (1996). The practical implications of constructivism. *Southwest Educational Development Laboratory Letter, 9*(3). Retrieved December 28, 2008 from http://www.sedl.org/pubs/sedletter/v09n03/practice.html.

Iverson, B. K., Pascarella, E. T., & Terenzini, P. T. (1984.) Informal faculty-student contact and commuter college freshmen. *Research in Higher Education, 21*(2), 123 – 136.

Johnson, D. W., Johnson, R., & Smith, K. (1998). *Active learning: Cooperation in the college classroom*. Edina, MN: Interaction Book Co.

Kezar, A. (1999.) *Higher education trends (1997 – 1999): Faculty*. Washington, DC: ERIC Clearinghouse on Higher Education.

Kuh, G. D. (2001.) Assessing what really matters to student learning: Inside the National Survey of Student Engagement. *Change, 33*(3), 10 – 17, 66.

Kuh, G. D. (2003.) What we're learning about student engagement from NSSE. *Change, 35*(2), 24 – 32.

Kuh, G. D., Cruce, T., Shoup, R., Kinzie, J., & Gonyea, R. M. (2008.) Unmasking the effects of student engagement on college grades and persistence. *The Journal of Higher Education, 79*(5), 540 – 563.

Mahoney, M. J. (2004). What is constructivism and why is it growing? *Contemporary Psychology, 49,* 360 – 363.

Malnarich, G. (2005). Learning communities and curricular reform: "Academic apprenticeships" for developmental students. *New Directions for Community Colleges, 129,* 51 – 62.

Marshall, H. H. (1992). Seeing, redefining, and supporting student learning. In H. H. Marshall (Ed.), *Redefining student learning: Roots of educational change*. Norwood, NJ: Ablex.

Miranda, M. V. (2007). Find your voice: Eliminate classroom phobias. *The Community College Enterprise, 13*(1), 7 – 22.

Miranda, M. V. (2008). Increasing class participation in social phobic students. *The Community College Enterprise, 14*(1), 9 – 23.

National Center for Education Statistics. (June 2006.) *Profile of undergraduates in U.S. postsecondary institutions: 2003 – 04 with a special analysis of community college students*. Retrieved December 28, 2008, from http://nces.ed.gov/ pubsearch/ pubsinfo.asp?pubid=2006184

National Center for Education Statistics. (October 2006). *Placing college gradua-tion* rates in context: How 4-year college rates vary with selectivity and size of *low-income enrollment.* Retrieved December 28, 2008, from http://nces.ed.gov/ pubsearch/ pubsinfo.asp?pubid=2007161

National Center for Education Statistics. (2007.) *Digest of education statistics. Table 180. Total fall enrollment in degree-granting institutions, by control and type of institu-tion: 1963 through 2005.* Retrieved December 28, 2008, from http:// nces. ed.gov/programs/digest/d07/tables/dt07_180.asp

Oakes, J., & Lipton, M. (2007). *Teaching to change the world* (3rd ed.). New York: McGraw-Hill.

Ormrod, J. E. (1998). *Teaching teachers: The problem with emphasizing "isms."* Paper presented at the Annual Meeting of the American Educational Research As-sociation, San Diego, CA.

Pascarella, E. T. (2001.) Identifying excellence in undergraduate education: Are we even close? *Change, 33*(3), 19 – 23.

Pascarella, E. T., Edison, M., Nora, A., Hagedorn, L., & Terenzini, P. T. (1998.) Does community college versus four-year college attendance influence students' educational plans? *Journal of College Student Development, 39*, 179 – 193.

Pascarella, E. T. & Terenzini, P. T. (2005.) *How college affects students: A third decade of research* (Vol. 2). San Francisco: Jossey – Bass.

Raftery, S. (2005.) Developmental learning communities at Metropolitan Commu-nity College. *New Directions for Community Colleges, 129,* 63 – 72.

Reynolds, R. E., Sinatra, G. M., & Jetton, T. L. (1996). Views of knowledge acquisi-tion and representation: A continuum from experience centered to mind centered. *Educational Psychologist, 31,* 93 – 104.

Richardson, V. (1996.) From behaviorism to constructivism in teacher education. *Teacher Education and Special Education, 19,* 263 – 271.

Santrock, J. W. (2008). *Essentials of life-span development.* New York: McGraw-Hill.

Silberman, M. (2006). *Teaching actively.* Boston: Allyn & Bacon.

Sorey, K. C. & Duggan, M. H. (2008.) Differential predictors of persistence be-tween community college adult and traditional-aged students. *Community College Journal of Research and Practice, 32*(2), 75 – 100.

Stiggins, R. (2008). *Introduction to student-involved assessment for learning* (5th ed.). Up-per Saddle River, NJ: Prentice Hall.

Sungar, S. & Tekkaya, C. (2006.) Effects of problem-based learning and traditional instruction on self-regulated learning. *The Journal of Educational Research, 99,* 307 – 317.

Terenzini, P. T. & Pascarella, E. T. (1980.) Student-faculty relationships and freshman year educational outcomes: A further investigation. *Journal of College Student Personnel, 21*(6), 521 – 528.

Tinto, V. (1993.) *Leaving college: Rethinking the causes and cures of student attrition* (2nd ed.). Chicago: University of Chicago Press.

Tinto, V. (2000.) Linking learning and leaving: Exploring the role of the college classroom in student departure. In J. M. Braxton (Ed.), *Reworking the student departure puzzle.* Nashville: Vanderbilt University Press.

Woolley, S. L. & Woolley, A. W. (1999.) *Can we change teachers' beliefs? A survey about constructivist and behaviorist approaches.* Paper presented at the meeting of the American Educational Research Association, Montreal.

Woolley, S. L., Woolley, A. W., & Hosey, M. (1999.) *Impact of student teaching on student teachers' beliefs related to behaviorist and constructivist theories of learning.* Paper presented at the meeting of the Association of Teacher Educators, Chicago.

Yazedjian, A., Toews, M. L., Sevin, T., & Purswell, K. E. (2008.) "It's a whole new world": A qualitative exploration of college students' definitions of and strategies for college success. *Journal of College Student Development, 49*(2), 141 – 154.

Zea, M. C., Reisen, C. A., Beil, C., & Caplan, R. D. (1997.) Predicting intention to remain in college among ethnic minority and nonminority students. *Journal of Social Psychology, 137,* 149 – 160.

Zhao, C-M. & Kuh, G. D. (2004.) Adding value: Learning communities and student engagement. *Research in Higher Education, 45,* 115 – 138.