

Strategic Planning Advisory Committee
Education Subcommittee
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The education subcommittee has identified and documented the following two trends for 2006-2007 that have an integral effect on the work and future of Glendale Community College.

- (1) The population of under-prepared students continues to increase. This lack of preparedness appears in the numbers of students in the developmental education courses as well as a decrease in the preparedness of students to complete college level work in all academic courses.
- (2) On-line and hybrid class offerings as alternate delivery methods continue to increase worldwide and for our campus. Furthermore, new and innovative technology applications are also becoming more widely available for use within face-to-face courses. These courses and applications must be administratively supported, and faculty need an extensive and readily available training to be able to continue to offer quality courses.

Closing the Loop

During year 2005-2006, the education subcommittee identified the following three trends that have a direct impact on the educational success of Glendale Community College (quote):

- (1) The proportion of college students who are under-prepared is increasing. As college enrollment numbers climb, the percentage of students who are under-prepared academically also increases incrementally.
- (2) Changing higher education policies and workforce demands will impact both student expectations and graduation requirements. Glendale Community College must be responsive to these ongoing changes that are happening in the workplace.
- (3) During the past ten years a major trend in education has been the rapid growth of online, hybrid, and other distributed learning opportunities for students. We feel it is now time for GCC to further investigate and act upon this trend.

As is evident from this committee's choice of the two trends for 2006-2007 which will be documented below, the concern about the under-preparedness of students and the trend toward offering additional distributed learning options continues. The scope of our discussion is slightly different than that of last year's committee; however, the basic concern remains the same. **It is essential that the college support initiatives to help students develop the skills to succeed in a changing academic environment. Moreover, students must be given a choice of venues to complete their degrees.**

Workforce demands continue to increase in the Phoenix area. The particular programs on which the 2005-2006 subcommittee focused (biotechnology, teacher preparation, etc.) appear to be making significant strides toward well developed programs-of-study throughout the Maricopa system and at Glendale Community College specifically. Furthermore, a significant number of students who enter GCC identify work-related and/or job training as the primary reason for attendance, but this trend appears to be stabilizing (Student Intent Data). Due to the considerable breadth of demands placed by the workforce, it is difficult for particular directions to be defined outside of the unique study area. Therefore, although workforce preparation continues to be a significant focus of the GCC experience, we have chosen not to discuss this trend during this review cycle.

Student Under-preparedness

Developmental Students

In the Futures Report of 2005-2006, it was noted that the developmental student population (including those who “place” at below 100 level in math, reading or writing and/or are enrolled in an ESL course) at GCC has been steadily rising over the past several years. Although the percentage of these students relative to the total student population appears to have leveled off in the last few semesters to 17% in F05 and F06 (College Research Services – Data), the number of developmental students continues to be a significant concern that must be addressed. Within the next one to five years, there may be a significant change, and possibly even a decrease, in the developmental/ ESL population; however, this decrease should not be viewed as an improvement in preparedness but will most likely be a result of causes outside the purview of GCC’s direct actions. Proposition 300 may well have the strongest impact since now students will be required to show proof of residency in order to receive in-state tuition, “tuition waivers, fee waivers, grants, scholarship assistance, financial aid, tuition assistance or any type of financial assistance that is subsidized with state monies”(Helfgot). A letter sent out to students from the office of the Vice Chancellor of Student and Community Affairs clearly states no student without proof of residency will be turned away, but out of state tuition will be levied. Community college courses may no longer be affordable for many students.

The developmental student population has often been included in a student group classified as “at risk”- a term applied to students with a long list of characteristics that are believed to negatively correlate with their chances of academic achievement. The characteristics include being under-prepared for college, working 30 or more hours per week, having little support from family, being first-generation college students, and having little expectation of success (Roueche; Berker). Other “at risk” markers are being over the age of 24, delaying enrollment or not enrolling immediately after completing high school, attending part time, having dependents other than a spouse, being a single parent, being financially independent from parents, and not receiving a high school diploma (Horn). All of these “at risk” factors affect not only those students who “place” at a developmental level but also those students who enter academic courses and who are not prepared for the rigorous nature of college studies (see below).

In February 2007, the results of the National Assessment of Educational Progress (NAEP) 2005 twelfth-grade reading and mathematics assessments and the 2005 NAEP High School Transcript Study (HSTS) were released. This report stated that there was a decline in the reading scores and the percentages of students at or above Proficient and at or above Basic competencies compared with 1992. In addition, 61% of mathematics students performed at or above Basic, and 23% were at or above Proficient –meaning that only 16% of the high school seniors scored at an advanced level (National Assessment of Educational Progress). Thus, it is inevitable that our developmental student population will continue to be an important segment of the GCC student population since high school students who enter the college will be even less prepared for college work than in the past.

Recent promotions and marketing of GCC emphasize that it is easy to enroll at our college; it has no qualifying examinations or required essays. There is also an emphasis on accessibility to college resources. However, once a student enrolls, his or her retention becomes an area of concern. A similar community college district in California has discovered that while “barriers to access” have been low, “barriers to completion” need attention (Shulock and Moore). **Low retention necessitates a closer look at student orientation, advisement and placement to ensure students begin their college studies at an appropriate place.** There has been a continuing decrease in the number of developmental Math and English students who complete their programs at GCC. In 1988-89, 11% completed a degree; in 2002-2003 this number dropped to 9% (Futures); in 2003-2004 this number dropped again to 7% (College Research Services – Data). **Thus, not only should mandatory placement of students in preparatory classes be enforced, but the implementation of specific diagnostic testing should also be instituted.** This will specifically identify the student’s particular area of weakness and allow for higher instructor involvement and a greater chance of student success and completion of college-level courses. If students are required to take developmental classes, it is important to ensure the developmental classes are aligned with and support the ensuing college level classes. Moreover, **the faculty assigned to developmental courses should be given supplemental training in strategies for specifically teaching developmental students** since most faculty do not have a background in developmental education but have an M.A., M.S., or Ph.D. in a specific field of study.

Another disturbing trend is the continuing proportion of students who are not prepared for college-level reading and writing being enrolled in 100+ level academic courses. Many of these courses require a large amount of reading and/or terminology. Developmental deficiencies in basic skills should be rectified before these students proceed on to college work in order to increase the student’s chance of success. The 2005-2006 Futures Committee Education subcommittee data clearly showed lower success rates for students in 100+ level classes who place into and are co-enrolled in developmental Math and English classes. As an example, between 17 and 19% of all students enrolled in Psychology 101 (PSY101) during the last 2 academic years have been co-enrolled in developmental reading or writing (Futures; College Research Services – Data). Since Psychology carries with it a significant reading load and a high proportion of terminology, it is probable that a student enrolled in developmental courses students would find portions of the course difficult to understand or apply. **Thus, appropriate actions must be taken to alert the student to the potential disadvantages of attempting a 100+ level course while taking developmental course(s).** Recommended changes and/or additions to the advising procedures regarding co-enrollment from last year’s report have either not occurred or have not been successful. Furthermore, with the significant under-staffing of the advising department, issues that decrease the chances of student success and degree completion are perpetuated. **We suggest that proper advising procedures regarding co-enrollment and increased staffing and training for advisors MUST be implemented if we are serious about serving and retaining quality students at Glendale Community College.**

The 2005-2006 Futures Committee Education Subcommittee **suggested tracking (individual and group) of developmental students beyond the current data.** We share this request and add that this data **should include identification of particular education goals of these students and whether or not they achieve these goals by the end of their tenure at GCC.** We furthermore **suggest the creation and utilization of a form that a student must sign if they choose to enroll in both a developmental and 100+ class** such that the student is made aware of the potential for failure in the 100+ level courses.

Academic Level: Students in 100+ Level Courses

Even outside of the developmental student population, under-preparedness is a pervasive problem in the classroom. Although much of the “data” on this subject is anecdotal experience of college and university faculty, we feel that this problem is a barrier to student success within particular courses and ultimately to student success in completing a college degree.

The over-all preparedness of students has significantly decreased over the past decade; moreover, the situation certainly does not seem to be improving and may continue to be more significant as fewer students successfully earn a high school diploma. How this trend plays out in the next 3 to 5 years significantly hinges on the preparation students receive in high school and/or whether the “at risk” factors (as above) are addressed. Although some students are still well-prepared, self-driven and motivated, a significant proportion of students today lack the personal responsibility, time management, organizational and study skills and necessary motivation to successfully complete college coursework. The gap between these two groups of students is growing. It is necessary to both identify and attempt to rectify the “gaps” in what the students expect as they enter the college environment students and how that conflicts with the expectations of college instructors and the demands of college work. More and more students (from developmental to honors) are enrolling at the community college with weak or inadequate academic readiness skills in the following key areas:

- Study Habits - “Students don’t know how to study, how to organize and retain the information, or how to apply it.” (social science professor at public university). When asked about students’ abilities in several specific areas, faculty members say, “Students are inadequate writers, have trouble understanding difficult materials, fall short in knowledge of science and math, have poor study habits, and lack motivation.” An observation from an English teacher, “I see more and more students who expect a high grade for a minimal amount of work.” Much class time is often spent going over work that students should have learned earlier (Sanoff).
- Reading Comprehension - “When I give reading quizzes, they (students) frequently complain that the questions are difficult. Several years ago, students were more likely to say that quizzes were too easy.” (English professor at a public university) (Sanoff). Reading for comprehension and “deep” understanding is something that is foreign to many students. Most students have a “do-just-enough-to-get-by mentality”. Many students don’t know how to read a textbook, including honors students.

- Time Management - Realistic awareness and appraisal of time and effort needed to study, read, and do homework at the college level is lacking in many of our students. Conflicts with work schedules, family responsibilities, and health challenges, often result in early withdrawal or dropping out of school. (as above)
- False Sense of Preparedness (Honors Students) - An interesting and growing phenomenon has been occurring in many community college honors programs across the country. The debate is whether SAT, ACT, or completion of Advanced Placement (AP) courses or tests are reliable indicators of student readiness. And although there is a relationship between test scores and student preparedness, passing AP courses or exams in high school does not always guarantee the student can do college-level work. There is sometimes a false sense of preparedness on the part of the incoming freshman, when their (the honors program, AP courses, etc.) background is not equivalent to college-level work.
- Motivation - many students are not intrinsically motivated; most students complete many of their classes at a community college to satisfy a particular requirement rather than for pure interest in the subject. To help offset this lack of motivation, faculty attempt to provide clear learning objectives, give students choices in their education even within a course itself, help students choose their educational opportunities, provide real world applications of the material, and help students organize and execute specific courses of action to achieve success. Students who see a clear reason and direction for their actions will likely be more motivated to achieve success.

Particular deficiencies may exist in previous training of students who enroll in science classes, or their expectations of success in a science course may be unrealistic. Science classes may take more preparation than some other college courses and include additional vocabulary outside of the common vernacular. Many students fail to develop an appreciation of the sciences and in many cases develop a fear of science and math during their K-12 education. As such, instructors in the sciences face the following additional challenges:

- Science Anxiety & Attitudes – Anxiety, particularly in the sciences, “can seriously impede student learning;” furthermore, “Increasing attitude towards science is as important as the content itself” (Mintzes). Many students receive negative feedback about science throughout their K-12 educational experiences. Lack of analytical training at the K-12 level is one of the common causes of science anxiety. Many K-12 teachers may lack understanding or qualification for teaching science; because of their lack of training, they then stress memorization rather than critical thinking. To alleviate science anxiety and improve attitudes about science, qualified teachers may choose to emphasize a variety of hands-on and active learning techniques that introduce critical thinking and student equity to the science experience (Mintzes).

To help decrease anxiety and improve motivation, study habits, attitudes, and student engagement in general, some faculty choose to implement “newer” teaching strategies that focus on making course information more accessible and applicable to the student’s daily life. These strategies include providing real world examples, showing students the concrete value in learning material, and linking the material to students’ personal and professional lives. One method known as collaborative learning has been demonstrated to benefit students, especially those with lower grades (Tessier). **Additional faculty training in teaching alternative delivery methods could help to improve the success of the less college-ready students.** One significant step toward this has begun with the campus support for our Faculty Connection Center and the training and opportunities that it frequently makes available to faculty. Additional incentives for faculty involvement would also assist in encouraging already very busy faculty to invest the time in attending training.

What We’re Doing Right:

Certain initiatives and programs at GCC are in place to help mitigate the problems listed above. The continuing success of the ACE Plus program and of certain dual enrollment programs have helped bring students to campus who are more well prepared for college work. The existence of new student campus orientation seminars and classes like CPD 150 (Strategies for College Success) increase the chances of success for students who are willing to take advantage of this extra support in beginning their college careers. However, too few students see the necessity of attending meetings or taking classes that will not fulfill their degree requirements. **Again, significant advising of students regarding the existence and value of these programs is a critical piece to enhancing student success.**

Under-prepared Students: Challenges & Opportunities

If these crucial areas of academic readiness are not addressed soon, the problem will continue on a downward trend. In these challenging times of low enrollment and competition from other educational institutions, **there is a sense of urgency in addressing these challenges by providing the leadership, budget, and staff to rectify the growing problem of academic readiness (lack of) and under-preparedness of a large segment of the student population.**

There are many barriers, especially financial ones, to getting all the necessary tools in place to adequately serve a burgeoning developmental and under-prepared population. However, as a community college, we have the rare opportunity to serve students who may have otherwise not chosen to seek a degree. **The teamwork of faculty, staff, and administrators at all levels will result in a more well-educated and successful student population.**

Technology

Online and Hybrid Courses

For over 10 years, a major trend in education has been the rapid growth of online, hybrid, and other alternative delivery courses for students. Across the nation, K-12 schools are developing online virtual schools (Borja). The American Association of Community Colleges (AACC) has been posting articles and research in support of online and hybrid courses, changing pedagogies to increase the use of effective technology in the classroom to increase learning, and recommending community colleges develop their IT departments to better support technology, online, and hybrid programs. The AACC's "fast facts" state that one of the five hottest community college programs is computer technologies. The AACC and the League for Innovation in the Community College advocate and award community colleges that are both teaching the latest technology and implementing innovative technological advancements into the classroom for course delivery (American Association of Community Colleges; League for Innovation).

A fourth annual report on the state of online learning in the U.S. higher education by the Sloan Foundation reveals that online learning has not slowed down and is not anticipated to. Results of this national study are based on responses from over 2,200 colleges and universities. This study reveals that online learning appeals to students that hold employment and family responsibilities while going to school, and that an overwhelming number of online students are undergraduates. It is also reported that the perception of quality of online programs has increased, 53.6% of the schools studied agree that online education is critical to their long-term strategy, and many of the colleges are reporting that online courses make up a large share of their total enrollments (Allen).

Statistics reported in the Sloan Foundation's national report show that in Fall 2002, slightly more than 1.6 million students took at least one online course at U.S. degree granting institutions. Nearly 3.2 million online students are recorded as taking one or more online courses during the fall term of 2005. In examining enrollment trends, more than half (51.5%) of all online students are studying at two-year associate degree institutions. Advantages include schedule flexibility for the students and freeing up of limited physical space of classrooms for the school. Disadvantages are that faculty need greater time and effort to teach online, and students need to be more disciplined to be successful (Allen).

Virtual schools that offer online education to K-12 programs throughout the United States are now in existence. These online K-12 virtual schools are in place in Florida, Idaho, Maryland, Utah, Michigan, and California. Missouri and North Carolina are slated to open virtual schools this fall. Schools and states need to adapt the 20th-century funding and policy models so they don't hinder 21st-century models of teaching and learning (Borja). With K-12 moving to online learning, this method of delivery will be expected even more of higher-level educational institutions in the future.

Estimates of colleges offering some type of online education have reached 90 percent (Rominger). That figure includes faculty using web links and digital versions of lecture notes, not just online course formats. Rominger reports that recent technologies have led to the change in content delivery, but she does not believe that the quality of the learning experience is automatically increasing. This is attributed to the fact that an estimated 90 percent of online courses are produced by instructors working alone, using the same content and approach they use in the classroom. They are overworked and do not have the time and training or resources to put together a quality online program. The potential for using technology is much greater than what current online practice is delivering. **This would indicate that adequate training and time for course development should be factored in so that faculty can be up-to-date on using technology to increase student engagement and learning, and so that a standard quality format can be implemented across GCC's online and hybrid courses.**

The Faculty Connection Center is a critical source of faculty training; additional funding to this program would increase the breadth and number of training opportunities available to faculty in all disciplines. Again, additional incentives for faculty involvement would also assist in encouraging already very busy faculty to invest the time in attending training.

General Use of Technology in the Classroom

In addition to online programs, technology also needs to be accounted for in face-to-face classes. With the emergence of laptops, wireless technology, the Internet, scanners, USB drives, digital cameras, cell phones, PDAs, email, video-conferencing, etc., "it is no longer acceptable for educators to be technology illiterate" (Turner 1). The students of today have been termed "The Net Generation" due to the technology they have grown up with and interact with on a daily basis. "The 'Net Generation' has been described as experiential, engaged, and constantly connected, with a strong need for immediacy" (Oblinger).

They expect their teachers to be proficient in the use of technology, and to incorporate technology in the presentation of material and communication of grades and course information.

Not all students want online courses, or are technically savvy themselves, but most are found to want at least a moderate level of technology in the classroom. This can include Internet projects, the use of podcasting, blogs, gaming, wikis, etc. Students cite that if instructors use technology effectively, it is an asset. But if used improperly, it is an obstacle to learning (Kvavik; Roberts). Faculty must be given the time and training to effectively learn and implement the latest technology into the classroom to enhance student learning.

Many of the students entering the community college today may have had only limited access to web instruction, and although the resources may have been there, they may not have been used or taught effectively. We cannot assume that K-12 education provided excellent web instruction since it is lacking in other kinds of instruction. This presents a challenge, because students may feel that they are a Net Generation student, but may not have developed the necessary skills. Another look at what is called "Generation Next" shows this type of student (Pew Research Center) embraces technology to connect constantly with friends by text messaging, instant messaging, and email. This generation feels that the internet is the most reliable source of news.

We should approach eLearning and technology in the classroom the same way we approach traditional learning, by using effective learning objectives, focusing on written communication skills, and maintaining high standards.

To meet the demands of today's and tomorrow's students, faculty also need to be taught new pedagogy strategies utilizing technology rather than just how to implement technology into traditional lecture-styled teaching methods. Net generation students are used to interacting with technology, and need interaction in the classroom experience as well. **Pedagogy that incorporates interaction with technology through learning and assessment activities is a necessity.** This can help to engage students and to address "the unique learning styles people bring to the classroom" (Rose 23).

In 2004, the National Science Teacher's Association (NSTA) provided a summary of emerging technologies in America's classrooms. The report states: "Regardless of their eventual career paths, all students require a strong foundation in both science and technology, if they are to be successful in tomorrow's workplace" (Wheeler). We are in the early stages of selecting technologies that are best suited for our students and for our faculty. Technology can make information more relevant to students' lives in ways that students find intriguing and fun. There is a skill and knowledge base that we must consider to prepare our students for a global, knowledge-based society. **We need an in depth study to decide what technologies need to be taught and what teaching strategies work best to enhance teaching and learning. Perhaps more partnerships need to be developed between the technology developers and faculty; this collaborative effort may keep down the cost of technology, may reduce the learning curve for both students and faculty, and may keep the evolution of technology and the learning of both the skills to use the technology and the knowledge from the technology at an equal pace.** We cannot afford to fall too far behind technology that will be used in tomorrow's workplace.

Technologies that should be considered, and/or that are on campus but are underutilized or faculty need additional training on include:

- Presentation Software
- Animation
- Classroom Response Systems
- Interactive Whiteboards and Tablet_PCs
- Smartboard and Softchalk
- Interactive Animations, Simulations and Virtual Laboratories
- Probeware/Data Acquisition Systems
- Communication Outside the Classroom
 - Course management systems
 - e-mail – listserves. News groups, class discussion boards, electronic bulletin boards
- Distance learning
- Learning assignments
 - Blogs
 - Wikis
 - Discussion Boards

- Online Assignment Submission
- Concept Mapping Software
- Calibrated Peer Review

Many of these need appropriate IT support in addition to faculty training and implementation.

GCC's Role

GCC has attempted to keep pace with these current trends. From the period of F02 to F06, the online and hybrid populations at GCC have risen from just 699 to 2753 total students. Simply in the last year (F05-F06), student enrollment in these types of courses has risen by nearly 200 students – this represents an 11.6% growth within the online student population (College Research Services – Data). An additional 0.5% growth per year in the online student population is expected to continue and, most likely, to increase significantly more as eLearning opportunities become more and more expected. Further, GCC must advance their course offerings to counter the increasing competition from other schools and for-profit institutions.

Competition in the state of Arizona for GCC's students exists from more than 75 private colleges and technical schools, 10 community colleges outside of the MCCCDC system, the MCCCDC sister campuses and satellite locations, and three public universities (Arizona Commission for Postsecondary Education). Many of the larger Arizona competitors offer at least some online course offerings. Competition is also increasing from online schools in other states offering courses and degrees to potential GCC students without having to leave the comfort of their homes.

While GCC does not want to become another “online college” like Rio Salado Community College, Rio serves as a primary competitor for GCC students due to its structured online program, flexible opportunities that fit with more and more students' lifestyles, and funding to continue to improve their online proficiency. Official 45th Day Fall 2006 FTSE numbers report a negative 3.4% for GCC, while they were a plus 13.8% for Rio Salado (College Research Services – Full-time). This is double the increase in Rio's FTSE from the previous year, and a second year of decline for GCC.

Since GCC's funding is driven by enrollment, the development of more eLearning opportunities (online and hybrid) that are increasingly expected by students will potentially draw additional student enrollment. Also, by increasing the use of technology in the pedagogy of traditional face-to-face classes to enhance student learning and active engagement, GCC should see an increase in its retention statistics. This will also have a positive impact on enrollment as more students successfully complete courses and continue on with their education to complete a certificate or degree.

Successes and Opportunities

Several suggestions were made by last year's committee that have, to varying degrees, begun to be implemented as our eLearning offerings grow. **Support for and a unified structure within our eCourses program is imperative to foster the continuing growth of our eCourses program.** The hiring of an Online/Hybrid Faculty Facilitator and support of a Faculty Development Facilitator position was the first step in building a foundation for the growing program under the coordination of our Faculty Connection Center (FCC), our Center for Teaching and Learning. The Online/Hybrid Facilitator has begun development of a number of direct ways to support and guide the development of unique but efficient online/hybrid courses, including:

- Development of a workshop for Online/Hybrid courses that will be offered in Spring 2007.
- Development of a checklist for faculty that will include a list of training needs required to teach online or hybrid courses.
- Maintenance of FCC office hours 3 days per week specifically to help faculty who need assistance with online/hybrid course development.
- A process and student assessment as well as pre-assessment and faculty assessment is being developed for use in future semesters although program-wide assessments have not yet been developed. (Benavides)
- An eCourses Website with consistent terminology used in our various alternative delivery formats has been developed. This one-stop shopping for all of our alternative delivery courses allows students to view all of our alternative delivery courses, provides tutorials for students to help them navigate in their eCourses, and allows faculty to provide students with pertinent information for all of our alternative delivery courses (Williams).

All of these steps are significant in supporting the development of a more inclusive eLearning community and in providing faculty who wish to teach online the support necessary to create quality classes.

There are still obvious omissions in the development of a truly cohesive and more successful online program. GCC lacks clear direction, goals, programs, and assessment for its distance education courses. We need to make an immediate move towards organizational structure that defines the "chain of command" for our distance-learning program as a unit. **We need to have standards, guidelines, and systems that hold faculty accountable for quality distance education.** In a program that serves over 2000 students per semester with approximately 250 sections of courses being offered, **there needs to be a centralized, managerial coordinator to over-see the program** (Benavides). To prevent a continued decline in GCC's FTSE, work on these recommendations should begin immediately. As a first step, the President's Technology

Advisory Taskforce (PTAT) has been charged with providing clear and collaborative decision making to move GCC towards excellence in using technology in education.

A critical part of preparing our students for the future will be increasing their information literacy and their ability to use technology. Thus it is a necessity that we constructively use and, therefore, financially support the use of technology both within an inclusive online program and within technology enhanced face-to-face courses.

References

Allen, I. E., and J. Seaman. "Making the grade: Online education in the United States, 2006."

Needham, MA: Sloan Consortium. Retrieved 2/25/2007 from

http://www.sloan-c.org/publications/survey/pdf/making_the_grade.pdf.

American Association of Community Colleges. 2007. www.aacc.nche.edu.

Arizona Commission for Postsecondary Education. 2007. Retrieved 3 Mar. 2007 from

http://www.azhighered.gov/acpe_default.aspx?pageid=11

Benavides, Sheryl. E-mail interview. 8 Feb. 2007.

Berker, A., et al. "Work First, Study Second: Adult Undergraduates Who Combine Employment and Postsecondary Enrollment." Postsecondary Educational Descriptive Analysis

Reports. Washington, DC: National Center for Education Statistics. 2003.

Borja, R. R. "States Urged to Adapt Rules to Keep Pace with Growth in Online-learning Options." Education Week 26.11 (2006): 12.

College Research Services – Data collected and compiled for period up to Fall 2006. Glendale Community College. Retrieved 27 Feb. 2007.

College Research Services – Full-time student enrollment data. E-mail. Glendale Community College. Spring 2007.

Futures Committee, Education Subcommittee Report 2005-2006. Glendale Community College.

Helfgot, Steve. Letter to students. Mar. 2007.

Horn, L., and C. Carroll. "Nontraditional Undergraduates: Trends in Enrollment from 1986 to 1992 and Persistence and Attainment Among 1989-90 Beginning Postsecondary

- Students.” National Center for Education Statistics.
<http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=97578>
- Kvavik, R. B. “Convenience, Communications, and Control: How Students Use Technology.”
Educause: Educating the Net Generation. (2005): 7.1-7.20. Retrieved 3 Feb. 2007.
[www.educause.edu/educating thenetgen/](http://www.educause.edu/educating_thenetgen/)
- League for Innovation. (2007). www.league.org.
- National Assessment of Educational Progress (NAEP). 2005 Nations Report Card (Retrieved
March 1, 2007) <http://nationsreportcard.gov>
- Oblinger, D. G., and J. L. Oblinger. (Eds.). “Transforming Education Through Information
Technologies.” Educause: Educating the Net Generation. (2005).
- Pew Research Center, for the People & the Press. “How Young People View Their Lives,
Futures and Politics, A Portrait of ‘Generation Next’.” 2007. <http://people-press.org/>
- Roberts, G. R. “Technology and Learning Expectations of the Net Generation.” Educause:
Educating the Net Generation (2005). Retrieved 3 Feb. 2007.
[www.educause.edu/educating thenetgen/](http://www.educause.edu/educating_thenetgen/)
- Roueche, J and S. Roueche. Between a Rock and a Hard Place: The At-risk Student in the
Open-door College. Washington, D.C.: Community College Press, 1993.
- Rominger, R. “Quality Online Education: A Social Authoring Approach.” Learning Abstracts,
10.1 (2007):1-6. Retrieved 5 Feb. 2007.
<http://www.league.org/publication/learning/edition.cfm>
- Rose, D., and J.Cook. “Education and Technology: Next-Generation Learning Environments
Address Needs of Today’s Students.” Community College Journal, 77.2 (2007): 20-23.

Sanoff, Alvin P. "What Professors and Teachers Think: A Perception Gap Over Students' Preparation." Chronicle of Higher Education 10 Mar. 2006.

Shulock, N., and C. Moore. "Rules of the Game: How State Policy Creates Barriers to Degree Completion and Impedes Student Success in the California Community Colleges." Sacramento, CA: Sacramento Institute for Higher Education Leadership & Policy. (2007).

Student Intent Data – accessed 3/5/07. Glendale Community College.

<http://www.gc.maricopa.edu:2058/ie/gccdatadigest/studentdems.swf>

Tessier, J. "Small-Group Peer Teaching in an Introductory Biology Classroom." Journal of College Science Teaching 36.4 (2007): 64-69.

Turner, L. "20 Technology Skills Every Educator Should Have." Technological Horizons in Education. 2005. Retrieved 1 Aug. 2005.

<http://www.thejournal.com/magazene/vault/articleprintversion.cfm?ai>

Wheeler and Graumlich. "A Digital Divide, Emerging Technologies and America's Classrooms." 2004.

Williams, Stephen, Sue Murry, Sheryl Benavides, Jim Daugherty, Matt Ashcraft, and Mike Aragon. GCC's 2006-2007 Innovation of the Year, MCCCDC Presentation and Summary. March 9, 2007.