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ABSTRACT

This monograph addresses developmental education in the 21st Century, identifying the major issues and providing examples of successful developmental programs. The first chapter, "Access and the New America of the Twenty-First Century," emphasizes several changes in American society that have affected access to education and developmental programs. These include the access revolution following World War II, technology, the aging of the population, immigration, poverty, family dynamics, employment, and enrollments in higher education. The second chapter, "Work, the Individual, and the Economy," discusses the changing nature of work and the resulting higher skills needed for employment, and welfare reform. Chapter 3, "What Works in Developmental Education," describes key components for developmental programs and provides several examples of programs that have been successful. Chapter 4, "The Case for Developmental Education in the Twenty-First Century," offers several arguments that support the need for developmental programs. The remaining ten chapters in the monograph contain data and descriptions of exemplary developmental education programs at community colleges throughout the country (Bucks County Community College, Community College of Denver, Delgado Community College, Greenville Technical College, Guilford Technical Community College, Portland Community College, Prince George's Community College, Sandhills Community College, Santa Fe Community College, and Trident Technical College). References are provided at the end of most chapters. (YKH)

DEVELOPMENTAL EDUCATION:
A TWENTY-FIRST CENTURY SOCIAL AND ECONOMIC IMPERATIVE

League for Innovation in the Community College
The College Board

The College Board has been a key partner in League projects and activities for over a decade. We are indebted to the College Board for its generous contributions to the preparation and publication of this special monograph on developmental education. Copies of this monograph are available from the League office for $15 each. Order through the League's Web site at www.league.org or call (949) 367-2884.

DEVELOPMENTAL EDUCATION:

A TWENTY-FIRST CENTURY SOCIAL AND ECONOMIC IMPERATIVE

Robert H. McCabe and Philip R. Day, Jr.
Editors

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FOREWORD

Donald M. Stewart, President
The College Board

Since the first educational institutions were established on this soil, a central and intractable tension has existed in the American *paideia*, the dynamic and varied means by which we educate ourselves in the United States. Can we maintain unassailable standards of excellence, calling one particular performance fine and another weak, while also expanding, particularly at public expense, educational opportunity to all who wish to partake? Can we democratize education, popularizing its institutions, while insisting on a hierarchy of its standards?

Our history provides a rather clear response: *Can we imagine doing otherwise?*

As in too many public debates, a false dichotomy often creeps into our discussions of postsecondary education: Are we for or against developmental education, are we for or against high standards? The real world of our republic, dedicated to an expansive vision of democracy, does not allow any such trade-offs. We must obviously maintain rigorous demands upon our students, upon our institutions, and upon our graduates. Independent, nonpartisan sources of professional and academic judgment must be sustained, sources embodied in organizations like the College Board. But at the same time, and emblematic of our republic's commitment to expanded opportunity, we must also actively establish a vast array of entry points into our postsecondary institutions. The changing contexts of our personal, professional, and public lives–as so usefully portrayed in this monograph–demand an equally responsive system of flexible access to rich learning environments, built in light of rigidly demanding standards.

Such a flexible, democratic, and demanding system will require a constantly evolving set of programs, new institutional adaptations, innovative curricula, sophisticated professional development support, well-articulated academic standards, and dynamic, reliable assessments. New educational players, new partnerships among existing players, and new applications of emerging technologies will enrich the mix. No one element, no single panacea will suffice. Within this flexible educational configuration, developmental education will certainly continue to play an important role, and so merits our concerted attention. We must learn from exemplary programs, and we must refine our practical judgment about what student success will require in the future.

It is a special pleasure for the College Board to sponsor this monograph on such an important issue for U.S. education, and to do so in collaboration with the League for Innovation in the Community College. We are particularly gratified to support the fine work of two wonderful colleagues, Robert H. McCabe, former chair of our board of trustees, and Philip R. Day, Jr., a member of our Government Relations Advisory Panel. Dedicated both to equity and excellence in our educational system, the College Board welcomes this and any opportunity to assist the good work of our postsecondary institutions.

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Robert H. McCabe -- Philip R. Day, Jr.

PREFACE

Developmental education–the offering of precollege or basic skills courses at the community college–is one of the most controversial components of American education today. Most public decision makers are frustrated by the volume of underprepared students entering colleges, blame the public schools for failure, and frequently move to limit remedial services in higher education. They see these services as duplicative, costly, and unworthy of a place in college. For a variety of reasons, educators are reluctant to debate the issue. Nevertheless, history has shown that developmental education has been integral to maintaining democratic access to higher education, and every factor indicates that it will be increasingly essential to the nation's future.

Demographic and economic forecasts predict a new America in the twenty-first century with change as the only constant. A dramatic shift in the balance between skilled and unskilled jobs is taking place, with most of the available jobs requiring skilled workers, and the most rapid growing occupations requiring postsecondary education. Equally significant are changes in the demography. By 2020, the nation will have double the number of elderly, be a "majority minority" populace, have slow population growth consisting mostly of immigrants from developing nations, and have fewer individuals in their prime work years. More than ever before, every individual in his or her work years will be needed in the work force. Yet, data indicate a growing mismatch between the skills and competencies of Americans and those required for a productive society. An underprepared work force has no hope of supporting American business in a global economy or deriving personal benefits from economic growth and prosperity. Without a restructured educational process designed to assist every individual, efforts to improve the quality of life for all Americans will surely fail.

Developmental education is of great importance to America's welfare, and policy issues involved need to be fully and openly discussed. This monograph is intended to provide information that can serve as the basis for such discussions.

Section One focuses on the status and future of developmental education. The implications for American higher education of changes in demography and the nature of work are reviewed. The elements of successful remedial programs are outlined. In addition, based on need, cost, and performance data, a case is made for continuation and enhancement of developmental education in the next century.

Section Two presents ten exemplary community college developmental education programs. A comprehensive review of each institution's remedial education program highlights the institutional context, program design and key features, program evaluation model, and program performance data, including student outcomes and institutional costs.

Such model programs demonstrate that developmental education provides an impressive direct return in investment to society–the cost is low and the success rate impressive. Students develop the skills and confidence to become self-sufficient, and business and industry gain a better-prepared work force. Ultimately, society avoids the staggering costs of social dependency. Support for continuation and improvement of

SECTION ONE

DEVELOPMENTAL EDUCATION ISSUES

Chapter 1

Access and the New America of the Twenty-First Century

Robert H. McCabe and Philip R. Day, Jr.

The half century since World War II has been marked by a concern for equality and continuous increase in the complexity of work. To match the need for a more prepared work force with the need for equal opportunity, access to higher education has been systematically increased. The result of such opening of the doors to higher education has been the entrance of increased numbers of underprepared students, such that about half of all students entering community colleges today need some form of remedial (developmental) education.

Developmental education programs–designed to prepare students to enter college courses–have been central, if controversial, components of open-access two-year colleges since these institutions swept the country during the community college movement following World War II. Although the value and effectiveness of these programs remain politically sensitive and emotionally charged, every social, demographic, and economic factor points to the need for further broadening of educational access and an even greater need for effective preparation of students for college-level work. Successful developmental education assures continuation of 50 years of progress toward greater equality and a better-educated, more productive American people.

The Access Revolution

Americans bonded in an unprecedented emotional and unified commitment to the Second World War. They were eager to demonstrate support for the country's fight to protect democratic values and to participate in any way possible. They cultivated victory gardens in the suburbs, collected and contributed pots and pans (even when these items were not needed), and placed stars for each serviceman in the front windows of their homes. They believed that their cause was just and that the Axis nations were evil. When the war ended with Allied victory, they believed justice had prevailed. Returning G.I.s were heroes, and the American people wanted to bestow on them the most valuable gift possible. In response, Congress enacted the G.I. Bill and gave returning veterans an unprecedented opportunity to attend college.

The 1944 G.I. Bill of Rights was a resounding success and changed America forever. The country converted the amazing wartime industrial development into peacetime activities. New opportunities for more skilled individuals opened to match increased postsecondary graduates. The U.S. Chamber of Commerce applauded the constructive economics of college access: more skill, more productivity, a larger tax base, and more prosperity.

Following passage of the G.I. Bill, colleges and universities admitted veterans who did not meet existing admission criteria. These students, however, systematically outperformed their younger, selectively admitted classmates, and demonstrated a model of educational success that could come with greater maturity and a second chance. Their performance matched the success attitudes of the postwar period and provided a basis for expanding educational opportunity. As a result, America began a half century of continuous broadening of college access. The 1948 "Truman Report" clearly stated the case for equal opportunity and provided momentum for dramatic expansion in higher education. The report urged "free and universal access to education, in terms of the interest, abilities, and need of the student, must be a major goal in American education" (Callan, 1997, p. 101).

The postwar opening of educational opportunity for World War II veterans was only the beginning of the access revolution. The civil rights movement relentlessly pried the doors to higher education more fully open. Initial attention focused on African Americans as the first step in a progression of expanded educational opportunities to previously underrepresented groups. Americans came close to a moral consensus in believing that something must and

could be done to correct the historic subjugation of African Americans.

The federal government initiated a series of massive programs to bring about equality–the 1954 landmark school desegregation decision in *Brown vs. Board of Education*, the Civil Rights Act of 1964, the Voting Rights Act of 1965, and the Great Society Programs. These actions fueled massive growth in higher education, although most of the costs were borne by the states. During one 10-year period spanning the 1960s, America spent more on construction of higher education facilities than had been spent in its entire previous history. During that same period, operational expenditures increased seven times and enrollment tripled.

With such growth, the vision of equal educational opportunity for Americans has expanded to include individuals of both genders, from all races and ethnic backgrounds, and with all forms of economic, social, physical, or educational limitations–the historically underrepresented, underprivileged, and underprepared. Meanwhile, America has learned that students are not the only beneficiaries from increased educational opportunity. Society as a whole, including business and industry, has benefited from a better-educated work force. This half-century of educational inclusion has allowed ever-growing numbers of Americans to gain the competencies to become self-sufficient and to be full participants in society.

The opening of opportunity to higher education has not come without problems, however. Growing numbers of students with limited academic skills presented unfamiliar challenges for colleges. Most institutions were not prepared to serve this new student population, and many felt that to simply provide access was sufficient. The consequences of ineffective or nonexistent developmental education programs were damaging to institutions as well as students. Inadequate screening or placement procedures allowed students to enroll in whatever classes they chose and forced faculty to deal with a sometimes overwhelming range of academic abilities in their classes. Too often the result was either high proportions of failures or lowered performance expectations to accommodate students who were less prepared. More individuals completed college programs who otherwise would not have had such opportunity without open-access policies, but many did so without acquiring the certified competencies. A number of the new college students simply dropped out. Such outcomes led critics to censure community colleges with inadequate remedial education programs that promoted the dark side of open-door admissions–"the right to fail," "cooling out" of student aspirations, and the "revolving door" (Roueche and Roueche, 1993, pp. 31, 53).

To be successful, the nation must face three great challenges–remaining competitive in a global economy, reversing the growth of a permanent and disenfranchised underclass, and developing a work force possessing twenty-first century skills.

These years of increasingly open access to higher education have shown us many such failures, but they also have illuminated numerous developmental education success stories and helped us isolate the characteristics needed for community colleges to fulfill their egalitarian mission as democracy's colleges. We have learned that comprehensive developmental education programs marked by high expectations, well-trained faculty, carefully structured courses, multiple learning options, and extensive student support systems are indispensable in institutions with open admissions, if students are to succeed and high standards are to be maintained. While students' skills and competencies must be raised to required levels for admission to college-level courses, we have seen that with proper organization and support, developmental education can be extraordinarily cost effective in providing lifelong learning opportunities for underprepared students and meeting changing workforce needs of the next century.

A New Century/A New America

For the past 50 years, open access to postsecondary education has been critical to societal advancement. It will become even more important in the radically different American society of the next century. Rapidly evolving technologies continue to raise the competencies needed in workplaces of the Information Age. For business and industry to remain competitive in a world economy, American workers must develop higher-order skills. At the same time,

demographic trends suggest that a growing number of Americans will reach adulthood underprepared for productive employment. Yet, these individuals cannot be written off. America must invest in education to develop the human infrastructure essential to the new world economy. To be successful, the nation must face three great challenges–remaining competitive in a global economy, reversing the growth of a permanent and disenfranchised underclass, and developing a work force possessing twenty-first century skills. William Brock (1993), chairman of the Wingspread Group on Higher Education, captured these challenges succinctly, "The world our children inhabit is different, radically so, than the one we inherited. An increasingly open, global economy requires–absolutely requires–that all of us be better educated, more skilled, more adaptable, and more capable of working collaboratively" (p. i).

In addition to changes associated with the increasing complexity of work, America is experiencing dramatic social changes related to major worldwide demographic shifts. Across the globe, Asian, African, and Hispanic populations are increasing while white non-Hispanics are declining. Currently, the proportion of white non-Hispanics in the population is 17 percent; by the year 2015, this figure will drop to 9 percent. Overall growth of the world population is slowing and in some areas, such as Eastern Europe, it is declining.

Population growth in the U.S. has slowed as well, and the nation is becoming more ethnically diverse, much less white, and older. Almost all current growth results from immigration and higher Hispanic birth rates. The white, non-Hispanic population in American is shrinking and will be less than 50 percent by the year 2015. According to Hodgkinson (1997), "We are the first world nation in the history of humanity. Our immigration has shifted from 85 percent European to 85 percent Latin American and Asian, with a rapidly increasing contingent from the Middle East." At the same time, the population is aging as both fertility and mortality rates have fallen below historic averages.

Aging of the Population

In 1900, the average life expectancy was 48 years, while today it is 76 years. Since 1973, the fertility rate has dropped below the 2.1 children per woman replacement rate. In 1900, the average age of Americans was 21; today it is 37. According to demographer Samuel Preston (1996):

> The population is rapidly growing older and will continue to do so in the next half century. Between 1995 and 2010, the population of people 65 and older will grow slowly by about 6 million, from 33.5 million to 39.4 million, as people born in the 1930s and early 1940s (when fertility was low) grow older. By contrast, between 2010 and 2030, with the baby boomers aging, the number will soar by about 30 million–from 39.4 million to 69.3 million. Meanwhile the population in the prime working ages of 20 to 59 will remain stationary at 160 million. In 1900, there were ten times as many children below 18 as there were adults over 65. By 2030, there will be slightly more people over 65 than under 18 (p.1).

The aging of America forecasts many challenges for our nation. Perhaps the most widely discussed challenge is the viability of Social Security and Medicare. The Social Security System uses a pay-as-you-go model, whereby payments into the system by current workers cover Social Security expenses for those who are retired. The system is based on the premise that when current workers retire, new workers will be available to pay into the system to support their retirement.

The changing demographics in our country, however, cloud the Social Security System's future. In 1900, only one in 25 Americans was over 65. By 2040, one in four Americans will be over 65. When the program was instituted in 1935, 17 to 20 workers paid into the system for each retired worker receiving benefits. By 1960, this ratio had fallen to an average of 5.1 workers for each retiree. Today, 3.4 workers support each retiree, and by 2020, only two workers are forecast to support each retired worker drawing Social Security benefits. These trends suggest many issues to be addressed, particularly the possibility of a shortage of workers to support the system.

Immigration

Changes in immigration patterns are dramatically changing the face of America. Immigrants are virtually the only source of population growth in this country, and today's

new Americans differ in origin from those of earlier years. Between 1820 and 1967, 40 million of America's 44 million immigrants came from European countries. From 1968 to 1994, only 3 million of the total 18 million immigrants came from Europe–a decrease from 90 percent to 17 percent. Today, immigrants come primarily from Latin America and Asia. Table 1 outlines patterns of legal immigration to the U.S. from 1981 to 1994.

Table 1.1 Sources of Legal U.S. Immigration 1981-1994

Countries	Number
Europe and Canada	1,612,265
Latin America and Caribbean	5,800,687
Asia	4,075,754
Africa	287,637

Source: Statistical Yearbook of Immigration and Naturalization Service 1992 Yearbook, pp. 26-29

In addition to the large numbers of legal immigrants, a substantial influx of illegal immigrants enters the U.S. each year–approximately 500,000 annually. Five million illegal immigrants are estimated to have already settled in the U.S., most from the Third World. Mexico is consistently the leading country of origin for the combined numbers of legal and illegal immigrants. The proportion of immigrants coming to the U.S. from Mexico has risen from an estimated 37 percent in 1989 to 44 percent in 1990 to 52 percent in 1991, and these numbers continue to increase (Fallon, 1996).

At the turn of the century, most European immigrants were unskilled, as are many immigrants today. When European immigrants entered the U.S. in large numbers, work was predominantly unskilled, and immigrants provided much needed manpower. In contrast, less than 25 percent of the jobs in the current work force rely on unskilled labor. Because so many of today's immigrants are substantially unprepared for employment in the new century, America faces a critical paradox. Unlike in past years, few new immigrants come with the job skills that business and industry need. Nevertheless, these "new workers" represent a key source of potential employees to fill the void that will be created as "baby boomer" retirements shrink the work force over the next few decades.

Poverty

America has made painstakingly slow progress in reducing poverty. The consensus on what should be done to relieve poverty and the zeal of the 1950s and 1960s to enact these changes have dissipated; instead, discussions have turned to questions of cost and accountability and away from concerns for dependent individuals or their development.

Poor neighborhoods in our country–the hubs of inequality–feel an understandable urgency and impatience for improvement. Over the past 30 years, some families from these devastated neighborhoods have moved up and out, but many of their neighbors have been left behind as part of a growing underclass marked by a cycle of conditions that create near-permanent poverty. Dreams have been driven out by despair, and, most dangerous of all, hope has been replaced by cynicism, both for those living within the neighborhoods and for mainstream Americans. Everyone in the nation suffers directly or indirectly when a segment of the population lives in unacceptable circumstances.

Of all factors, poverty correlates most closely with academic deficiency from kindergarten to college. The cyclic relationship between educational achievement and socioeconomic status has been long established, and current population trends suggest increased poverty among the growing numbers of underprepared Americans if we cannot meet their educational needs. Falling wages and increased economic uncertainty among unskilled workers is widening the gap between "haves" and "have-nots" in our society. Hodgkinson (1997) assesses the situation in powerful terms: "The numbers add up to a U.S. poverty rate as among the highest in the developed world–a distinction that threatens not only the future for many of our kids, but also the nation's competitiveness in the global economy"(p. 7).

Families and Children

The break-up of the traditional American family is linked to lower economic status and increased educational challenges for children. It is estimated that 60 percent of American children

will spend a portion of their childhood living with only one natural parent. In 1963, 77 percent of white children, 65 percent of Hispanic children, and 36 percent of African-American children lived in a two-parent family. By 1991, only half of U.S. children and teens lived in a traditional nuclear family. Today, women who are single parents raise 13.7 million children. Fifty percent of white children live with a divorced mother; 54 percent of African-American children and 33 percent of Hispanic children have mothers who have never married. One in three babies is born to a single mother (Mitchell, 1996). Some single parents do an excellent job of child-raising, but many single parents–most often women–struggle with insufficient time and money to adequately care for their children. On average, a single mother can give her children only one-fourth of the resources a two-parent family spends on its children.

Even among two-parent families, most mothers are now in the labor force. In 1979, the proportion of families with children under 18 in which both parents worked was less than one in five. By 1993, this number had grown to almost one in three. In addition, women with very young children are increasingly found in the labor force. Twenty years ago, only 31 percent of all women with children under the age of two worked outside the home. By 1995, that figure had risen to more than 55 percent (Cassidy, 1995). Currently, almost all children of two working parents spend time in the care of someone other than a parent. A growing number spend a portion of their days alone–the so-called "latch-key kids"–shopping for themselves or their families, caring for younger siblings, and even preparing their own meals.

Three potential problems that may be exacerbated by the changing structure of families impact the learning abilities of young children: poor prenatal care, inadequate health care, and insufficient parenting (Prather, 1995). The first environment affecting learning is the womb, where problems can occur that lead to learning disabilities and other cognitive disorders. Even with this knowledge, one-fourth of the pregnant women in America, particularly those who live in poverty, receive no prenatal care. Jack Levine (1998), director of the Florida Center for Children and Youth, points out that one in three babies born in Florida will not be able to learn effectively when they enter school: "From Day 1, babies born with physical problems, to ill-prepared or impoverished mothers, with few emotional supports, face enormous challenges to survive and succeed" (p. 1).

Inadequate parenting can also impede cognitive development. Recent research on brain development indicates that the "wiring" of neurons occurs after birth, and that experiences during infancy and early childhood play a critical role in defining the individual's capacity to learn. The brain and central nervous system develop rapidly during the first three years of life in response to parental attention and stimulation such as talking, singing, reading, or playing with the child. If these neural connections are not developed during the critical early childhood years, permanent loss of learning capability occurs. "The impact of these issues–poor prenatal care, inadequate health care, and poor parenting skills–is that American children suffer from insufficient intellectual stimulation. With so many parents trying to survive economically, with families living in isolation, and with so many teens having children, the result is a neglect of infants and toddlers' intellectual stimulation" (Education Commission of the States, 1996, p. 1).

Children who suffer from inadequate economic resources and parental attention are children at risk of school failure. When these students progress to high school, they often are tucked away in "holding patterns" in general studies programs rather than joining their peers in occupational or college preparatory classes. These children are destined to be underprepared adults. The decline of the traditional family and a rising percentage of children born into poverty raise the question of whether children of the twenty-first century will be sufficiently nurtured and equipped to keep our nation evolving in a healthy fashion.

Employment

The nature of work is changing significantly. We live in a new and fluid economy characterized by intense competition, rapid innovation, and relentless change. Lifetime employment with one company is increasingly rare, and individuals may expect to have seven or eight jobs or careers during their work life. The minimum competencies required for most new jobs continue to rise, and American business and industry forecast that three out of every four high school graduates will need some postsecondary education to be employable. At a time when higher skills are needed, a substantial number of

young Americans entering the work force, as well as existing workers who need retraining and upgraded training, are deficient in the academic skills needed to increase their occupational readiness.

Many economists have worried that the growing number of low-skill service jobs in our country is leading toward a declining middle class. A review of the facts suggests that this should not be the case. The percentage of unskilled jobs in America will continue to decrease due to the shift to knowledge-based industries and the exporting of manufacturing from the U.S. to less-developed countries. Imports tend to have a stronger effect on the wages of unskilled workers–the labor embodied in these imported goods is more unskilled, so imports tend to replace domestic unskilled workers. Exports, on the other hand, tend to demand skilled labor. Both imports and exports are expected to continue to grow, leading to increases in jobs that require more education, but which also offer higher wages. In addition, population changes point to an overall shortage of workers resulting from substantial numbers of individuals reaching retirement age as fewer young persons move into their working years. These trends suggest that America's future prosperity will depend on increased worker skills and productivity, which will be needed to meet workforce demands and compensate for the shrinking working age population. (Issues of twenty-first century employment are discussed in Chapter 2, *Work, the Individual, and the Economy.*)

Enrollment in Higher Education

Forecasts of higher education enrollment in the next quarter century vary from substantial growth to virtually unimaginable increases. All predict a more diverse and much larger student body, with the greatest number of individuals attending part-time and on a lifetime basis. The shift to lifelong education is already well underway. Public school enrollment in the United States declined between 1970 and 1984 from 45.9 million to 39.2 million. Based on this decline, legislatures expected a comparable decline in college enrollment beginning in 1984. This anticipation of lower enrollment led to decreased funding support, a circumstance from which much of higher education has not yet recovered. But, the projected decline did not happen. Between 1984 and 1994, higher education enrollment increased from 39.2 million to 44.2 million. The decline in the population of 18- to 24-year-olds was offset by an increase in the proportion of these individuals entering higher education, as well as by an impressive increase in older students. By all indications, these enrollment trends will continue and accelerate (Macunovich, 1997).

Most students are motivated to pursue higher education for the "wage premium"–the difference in both employability and earnings that accrue from greater preparation and more education. The evidence for the continued power of the relationship between education and earning is indisputable. Most future employment will require some postsecondary education, and better-prepared workers will earn more. The incentive to seek postsecondary education has never been greater, and with numerous federal and state financial aid programs, access has never been more available. These factors point to substantial growth in higher education enrollment in the next few decades. One demographer projects that enrollments of 18- to 24-year-olds will increase by 30 percent over the next decade, from 8.8 million to 11.4 million (Macunovich, 1997). As a greater proportion of young people enroll in higher education, challenges associated with new populations entering college will also increase. As in years past when increased access made higher education available to new groups of learners, both prepared and underprepared students will enter the community college's open door in greater numbers.

Choices for the Future

Frustrated with the failure of our K-12 education system to raise the academic achievement of young Americans, policy makers often react irrationally, particularly with regard to developmental education. Far too many politicians falsely assume that everyone has had a fair chance for educational opportunity and that developmental education is a costly duplicative expenditure. Politicians often lash out and argue for "saving money" by curtailing access to higher education or eliminating funding for developmental education programs. Nothing could be more costly or have more disastrous results. Powerful social, economic, and demographic trends point to growing numbers of students entering our higher education system

who are not adequately prepared for college-level work. For many of these individuals, effective community college developmental education programs are their pathway to success.

Following is a summary of social, demographic, and educational factors that explain why higher education can expect major increases in the number of students who are underprepared for twenty-first century society:

- Decades of research have shown that poverty and undereducation are inexorably linked. Children living in poverty are at risk for school failure and for becoming underprepared adults. The percentage of children living in poverty is increasing.
- Increases in poor parenting practices are linked to early sensory deprivation in young children, which new brain research indicates leads to irreversible underdevelopment of the brain and learning abilities.
- The number of single parents is growing. Too often, single-parent families suffer from economic and emotional hardships, which impede their children's educational progress.
- Future growth in the American population is projected to derive almost entirely from immigration. Most new immigrants are coming to the U.S. from Third World countries, and most are underprepared for twenty-first century employment.
- Younger Americans are predominantly minority. Historic inequities in communities and schools have led to low academic success rates for minorities and greater proportions of minority students who are underprepared for college work or the workplace.
- Approximately half of entering community college students test as academically deficient and require remediation in at least one subject area to enroll in a college-level course or degree program. Over the past two decades, this figure has not varied, and educational trends suggest it will not decline any time soon.
- Because of the changing nature of work, a growing percentage of Americans will enroll and re-enroll in college throughout their lifetimes, bringing greater numbers and heterogeneity to the student body.
- The declining population of Americans in their work years and potential shortage of workers call for higher levels of participation of young people in the work force and greater numbers of underprepared students entering community colleges to gain twenty-first century work skills.

Approximately half of entering community college students test as academically deficient and require remediation in at least one subject area to enroll in a college-level course or degree program. Over the past two decades, this figure has not varied, and educational trends suggest it will not decline any time soon.

The twenty-first century will be full of potential and promise, though the nation must face the critical issues of an underprepared population and the challenge of sustaining effective college access. The strength of American higher education is in its commitment to providing a second, third, and even a fourth chance to acquire needed knowledge and skills. But providing opportunity is not enough. We have an obligation to assure student success, and for many, this goal can be achieved only through quality developmental education. Fulfilling that commitment will lead to a well-educated citizenry that is essential to sustaining our democracy and improving the quality of life in all communities.

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Chapter 2

WORK, THE INDIVIDUAL, AND THE ECONOMY

Robert H. McCabe and Philip R. Day, Jr.

In 1988, *Business Week* issued a special report, "Human Capital: The Decline of America's Workforce," which provided the following unique but factual scenario.

> Take a trip back to what may be our future. The time period is the 1850's and England is hosting its annual Industrial Exhibition at the Crystal Palace in London. There is no doubt that in terms of global economic and military influence, Britain is the dominant power. The U.S. holds a distant second ranking, but is catching up fast. American companies are demonstrating their growing technological prowess and sophistication. Made in America reapers, muskets and tools are the marvels of the show. British businessmen are amazed at what they see. The marvels of mass production with products assembled from completely interchangeable parts are creating a wondrous stir among Britain's businessmen. So impressed are they that they refer to it as the "American System of Manufacturing."
>
> Before you know it, worried delegations of British industrialists set sail for America to investigate. Their findings? American manufacturing prowess is in large part due to a highly educated workforce. The "Yankees" have astonishingly high literacy rates of 90% among the free population. In the industrial heartland, 95% of adults read and write. In contrast, just two-thirds of the people in Britain are literate.
>
> Now, zip ahead a century or so to the late 80's and 90's. The U.S. is still the dominant economic world power, but barely hanging on. It is Japan that is ranked second and others are closing fast. The quality of their products; their growing influence in the fields of computers and particularly their applications to manufacturing and production; biotechnology and biophysics, is the marvel of American CEO's. They in turn make pilgrimages to Tokyo and other markets. Their findings? Yes, once again, behind the success in manufacturing prowess lies a better-educated workforce. In 1988, Japan's functional literacy rate was better than 95%. High School completion and retention rates, as well as college participation also rank significantly higher than the U.S. (Nussbaum, 1988, pp. 100-101).

The last several years have no doubt seen a significant improvement in America's global competitiveness position. Most analysts agree that sustaining and nurturing the strong economic growth will be more dependent than ever on human resource investment strategies. In this regard, the challenges are greater than ever. Typically, graduates from European high schools can enroll as sophomores in U.S. colleges and universities. In America, the latest studies suggest that over 25 percent of the work force is functionally illiterate. Performance comparisons on the most recent Third International Mathematics and Science Study tests on fourth, eighth, and twelfth grade students show that among the leading industrialized nations, American school children ranked at the bottom (along with Germany, Austria, and the Czech Republic), lagging significantly behind their counterparts from around the world (*New York Times*, 1998). Researchers and observers within and outside of education repeatedly point to the critical state of American education demonstrated in these facts and stress the direct relationship between access to and success in postsecondary education and the economic future of the nation.

Carnevale and Descrochers (1997) point out that since the 1980s, increases in global

competition and domestic policy change leading to deregulation have altered the underlying structure of the existing economy. These changes further underscore the critical role postsecondary education plays in facilitating access to the American Dream, economic prosperity, and an improved quality of life. The good news is that Americans are starting to get the message. The bad news is that there is a long way to go, particularly if we are committed to closing the growing gap between the "haves" and the "have nots" in our society.

Participation in higher education in this country has grown since its inception. At the beginning of the century, only three percent of adults held college degrees. Today, more than half of the nation's workers say they need either formal or informal education/training beyond high school to obtain adequate jobs, and 41 percent indicate that once on the job they need training to improve their skills (National Center for Educational Statistics, 1996). In 1982, only 14 percent of high school graduates took a college preparatory curriculum consisting of four years of English and three years each of mathematics, science, and social studies. By 1994, half of all high school graduates completed such a program (Hartle and King, 1997). Over the past 20 years, levels of participation in college have increased significantly for nearly every constituent group including women, low-income, and minorities. Major challenges to achieving true equity in higher education, however, still remain.

Since 1970, the percentage of 18- to 24-year-olds enrolled in higher education has increased for all income groups. However, Hartle and King (1997) point out disparities in higher-education participation between income groups:

> The participation gap between students from the highest income families and those from the lowest-income families has barely changed. In 1970, 79% of students from the highest income families went to college compared with 46% of those from the lowest-income group, a gap of 33%. In 1994, 88% from the highest income group went to college compared with 58% from the lowest, a gap of 30 percentage points (p. 12).

In America, the latest studies suggest that over 25 percent of the work force is functionally illiterate.

Adding to the significance of this analysis, the gap is widened by unequal rates of college completion between income groups. In 1993, the college completion rate for single individuals ages 18 to 24 who had a high school diploma and came from the top family income quartile, was 88.5 percent. The corresponding completion rate for those from the bottom quartile was 48.7 percent. These persistent income-driven differences have prompted labor policy leaders to assert that "we must develop and implement strategies that enable students from the lowest income families to attend (and succeed in) college at the same rate as those from the wealthiest families" (Stewart, 1997, p. 6).

The Changing Nature of Work

Whether approached from the public or private sector of our economy, the stakes for preparing the American population to meet growing workforce demands are clearly increasing. The public sector has mounted intensive efforts to reform the welfare system, control spending, and improve education. Concurrently, the corporate sector has initiated equally intensive efforts to increase competitiveness, re-engineer business priorities, and improve productivity. A key focus for both sectors is a major investment in the development of a high-quality work force.

In recent years, the demands of the workplace have changed dramatically, and this trend is accelerating as the millennium approaches. In 1950, more than 80 percent of the jobs in America were unskilled or semiskilled labor. Today, the balance between skilled and unskilled jobs has shifted dramatically, with more than half of the available jobs requiring skilled workers. By the year 2010, most of the jobs available (85 percent) will require skilled workers or professionals, while only a few jobs (15 percent) will be available for unskilled workers (National Center on Education and the Economy, 1990).

As work requirements have increased, the need for education and training has also escalated.

By the year 2010, most of the jobs available (85 percent) will require skilled workers or professionals, while only a few jobs (15 percent) will be available for unskilled workers

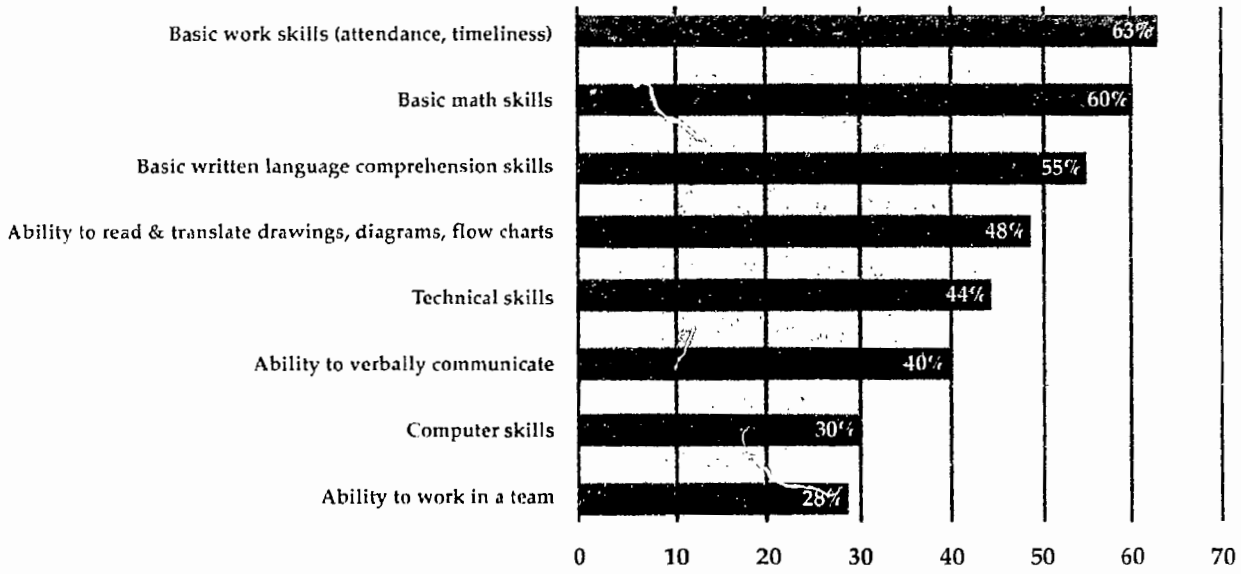
In the 1950s, even skilled jobs were largely repetitive and required minimal competence beyond the ability to read, write, compute, and follow directions. With increased education and training, however, the nation's products and delivery systems, as well as the productivity of the work force, have vastly improved. Today, the fastest growing occupations are changing rapidly and require significant postsecondary study, either a certificate or an associate degree, with only a few requiring a baccalaureate degree. Similarly, the redesign of the workplace places a premium on the worker's ability to contribute to the organization through problem solving and leadership that is necessary to keep pace with increasingly rapid changes in the work environment. In short, the basis for quality performance today far exceeds traditional basic skills.

As the Industrial Age gives way to the Information Age and the country experiences the benefits of economic prosperity, highly skilled, well-educated Americans stand to gain significantly. Those without these higher-order skills, however, stand to lose significantly. A recent survey of 4,500 member companies of the National Association of Manufacturers (1997) affirms the critical importance of workforce "preparedness." They assert that high school graduates come to the workplace ill-prepared and unable to complete the requirements of the job, and cite the need for direct intervention to remediate workers' skill deficiencies. The national study revealed high levels of worker deficiencies in three major areas:

- 63 percent report deficiencies in basic job skills, such as arriving at work on time and staying all day.
- 60 percent indicate their workers lack basic mathematics skills.
- 55 percent report serious deficiencies in workers' writing and comprehension skills.

Figure 2.1 provides a graphic view of the survey findings and displays the percentages of manufacturers who identified worker skill deficiencies in each of eight categories.

Figure 2.1: Percentage of Manufacturers Citing Worker Skill Deficiencies



Source: The Skilled Workforce Shortage: A Growing Challenge to the Future Competitiveness of Manufacturing, National Association of Manufacturers, 1997

Manufacturers have stepped in to close these skill gaps. Approximately 96 percent of the firms surveyed offer some form of education and training to hourly workers. More than two-thirds report that they provide remedial education in reading, writing, mathematics, and problem solving (National Association of Manufacturers, 1997).

Regardless of the product or service offered, the competitive workplace of today is a high-skill environment designed around technology and people who are technically competent.

Higher Skills for the Twenty-First Century

Beyond the basics, the skills that workers need to meet workforce demands–even if they hold the same job–continue to escalate. Regardless of the product or service offered, the competitive workplace of today is a high-skill environment designed around technology and people who are technically competent. Most American workers currently use a computer for some application related to their work. In 1984, only 24 percent of American workers used computers on the job. Even among jobs that do not require college training, more than half use a computer at least daily. Workforce computer-use studies find computers being used principally for basic mathematics, reading, and writing applications:

- 51 percent of jobs in today's work force use computers daily.
- 65 percent use computers for doing daily mathematics.
- 55 percent use computers to read paragraphs.
- 30 percent use computers to write paragraphs.

A 1997 National Alliance of Business report declaring, "Job Cuts Out, High Skills In," outlined a range of job areas in which expectations for employee skills are being raised: "With the explosion of technology in the workplace, skill level requirements are being ratcheted up by employers. Inventory, sales, marketing, expense analysis, communications, and correspondence are being done faster, better and cheaper, and with greater efficiency in the workplace" (p. 1).

Hickman and Quinley's (1997) comprehensive analysis of local, state, and national workforce education and training studies reveals six major skill sets needed for most of today's jobs:

- computer literacy–80.1 percent,
- interpersonal/team skills–79 percent,
- critical thinking skills–75 percent,
- personal/work ethic skills–67 percent,
- leadership/supervisory skills–67 percent and
- skills related to the use of quality improvement/management concepts–66 percent.

Possession of these skills increases the likelihood of a job applicant being hired and improves an existing worker's opportunity for retention and advancement.

Through turbulent years of reorganization, companies have raised skill requirements to hire employees with the competencies they need to be more competitive. As employees with lower or outdated skills have been replaced by more highly skilled workers, job elimination and downsizing have dropped to their lowest levels in the decade, and companies are preparing for increased productivity and profitability. "We're seeing the payoff after a decade of pain," says Eric Greenberg, director of management studies for the American Management Association. "The same forces that were costing jobs in the earlier years, such as restructuring, re-engineering and automation are now creating jobs that demand high skill levels. The people going out the door don't have them, the people coming in do" (National Alliance of Business, 1997, p. 6).

Our businesses and industries must have a work force of the highest quality in order to succeed in the world marketplace. Yet, a gross mismatch exists between the competencies of individuals entering the job market and the needs of employers. This gap between the skills needed and those possessed by members of the work force continues to grow and threatens to handicap the American economy.

Changes in the nation's demography also play a complex role in the widening skills gap. At the same time that job requirements have increased, the ethnicity of the nation has diversified significantly. In a single decade from 1980 to 1990, the Asian-American population of the country more than doubled, the Hispanic population increased by more than half, the Native American population increased by more than one-third, and the African-American population increased by more than one-tenth. Today, the combined growth

rate of these ethnic groups outpaces that of the nation as a whole, and ethnic minorities now represent almost a fourth of the population. In ten years, over two-thirds of the youth of the nation will be ethnic minorities, and by 2010, over half of those seeking to enter the work force nationwide will be minorities, an increase of one-third in only twenty years (Schwartz and Exter, 1989).

Whereas such demographic shifts in themselves should mean little in terms of workforce preparation, the unfortunate reality is that students from the nation's ethnic minority groups report disproportionately low high school completion and college entrance rates compared to the overall population. Today, almost a third of African Americans and half of all Hispanics have no high school diploma, and more than four-fifths of these growing populations have no postsecondary degree. These educational deficiencies sorely limit an individual's earning potential. Workers without a high school diploma earn about $5,000 a year less than their peers who graduated from high school, and at least $8,000 a year less than those with postsecondary studies and associate degrees. These salary disparities increase each year and compound to as much as a million dollars over a lifetime. Increasingly, workers with inadequate education and low levels of skills will have trouble finding a job at any salary level.

The one almost indisputable solution to ensure the social and economic well-being of all citizens is increased educational access and opportunity for all to develop requisite skills and abilities. If the work force is well educated, the nation will be globally competitive and produce a robust economy. In fact, the *Workforce 2000* report of the Hudson Institute posits that if every worker could read sophisticated materials, write clearly, speak articulately, and solve complex algebraic and statistical problems, the economy could easily exceed a four-percent growth-boom scenario, with workers realizing a significantly improved standard of living (Johnston and Packer, 1987). Another analysis suggests that increasing the education levels of workers by just one year increases productivity levels by 8.5 percent in manufacturing industries and 12.7 percent in nonmanufacturing sectors (Black and Lynch, 1996).

Baker and Reed (1994) assess the problems of the growing mismatch between demands for worker skills and the underskilled populace and conclude that a well-structured educational response is needed to create a "World Class" work force:

> America's problems can in fact be traced to a prime cause–and a cure exists. The root cause, exacerbated by rapid growth in social and entitlement programs, is the inability of the U.S. economy to expand sufficiently to cover the cost of increased spending. At the core of the economic situation is a large, underprepared work force that cannot or often does not choose to effectively compete in today's economy. Particularly in the production of sophisticated products, an underprepared or unmotivated work force has no hope of meeting the challenges of the future. . . . Without a restructured educational process to create this workforce, all of our efforts to combat social ills are doomed to be losing battles (p. 31-35).

Welfare to Nowhere

On the surface, it appears that the current wave of welfare reform is achieving success. Reductions in the welfare roles are impressive and suggest that these initiatives are reaching their goals. In one Florida college district alone, the number of people on welfare has plummeted 48 percent from 5,313 people to 2,755 since the new program started in October 1996. The experience of this region reflects trends that exist statewide (a 45 percent drop in welfare roles and a savings of $120 million since 1996), as well as throughout the nation.

The story has another side, however. Getting a job does not necessarily move an individual out of poverty. The average wage for working welfare recipients in Central Florida is about $5.75 an hour, or nearly $1,700 less per year than the federal poverty line for a family of three. Welfare reform is a first step toward self-sufficiency, says Michael Poole, chairman of the board that oversees Florida's welfare reform initiatives designed to wean people off public assistance and into jobs. But, Poole cautions that the working poor are proof that simply working full time does not constitute self-sufficiency (as cited in Kunerth, 1998). Although the economy has never been better, the number of low-income working people has never been larger–more than 200,000 in Central Florida alone, and over 900,000 statewide. Welfare reform and fast-track "work-first" social

support programs are fueling this growth and are contributing to creation of a large, permanent underclass. In the short-term, it can be argued that welfare reforms have not caused the train wreck that many have predicted. In New York City, however, serious concerns are now being raised concerning that city's "Workfare" program (a work-first public assistance program) and the lack of movement out of temporary Workfare positions into permanent jobs. Over the long haul, the skill requirements associated with the changing structure of the economy and work itself suggest that welfare reform must shift priorities from a work-first approach to a strategy that puts education and ..aining first, particularly for dependent, underprepared, and impoverished individuals.

As the number of unskilled jobs decline, a "last place battle" ensues for these increasingly rare positions. Each individual who is unprepared for higher paying opportunities must compete with several others for each job, while high skill jobs go unfilled. The staggering educational stumbling blocks facing underprepared Americans are reflected in these Florida statistics:

- A significant majority of welfare recipients do not have a high school diploma.
- 60 percent of welfare recipients have no work history or job skills.
- About 25,000 students drop out of high school every year.
- Nearly half of high school graduates who go on to college are underprepared.

At best, these individuals qualify for only 16 percent of the jobs in Florida. For entry-level work in the 100 fastest growing jobs in the state, two-thirds require at least one year of college, 14 percent require a bachelor's degree or higher, and only 15 percent will accommodate an unskilled worker with a high school diploma or less.

On this issue, Florida mirrors the nation. The recent national study by the Educational Resources Institute and the Institute for Higher Education Policy (1997) identifies an array of barriers that mitigate against the educational success of welfare clients:

> There are many factors that have a negative impact on welfare recipients' ability to attend college beyond the recently enacted changes in welfare laws. Many recipients:
>
> - lack the academic preparation needed to succeed;
> - do not fully understand the economic and social benefits of postsecondary education;
> - lack support from their friends and family;
> - have family responsibilities to maintain; and
> - lack the financial resources necessary to attend college.
>
> Forty-two percent of all adult welfare recipients had less than a high school education, compared to only 19% of the U.S. population age 25 or older. Another 42% of welfare recipients had a high school diploma or equivalent while 34% of the general population had a high school diploma or equivalent. Only 16% of welfare recipients had some level of postsecondary education, compared to 47% of the population. The absence of a high school diploma or equivalent means that almost half of all welfare recipients require basic education before they can even pursue a postsecondary education (p. 15).

Over the long haul, the skill requirements associated with the changing structure of the economy and work itself suggest that welfare reform must shift priorities from a work-first approach to a strategy that puts education and training first, particularly for dependent, underprepared, and impoverished individuals.

The report strongly recommends that higher education policy makers reach out beyond income and race to a growing number of disadvantaged students who currently decide against postsecondary education. Recently, U.S. Education Secretary Richard Riley (1997) echoed these views and underscored the risk associated with failing to reach out to all individuals in the population with adequate educational training and support to help them become productive members of the work force.

> The only way that we can ensure continued growth and prosperity is to ensure that all Americans possess the skills that are needed to build a

productive career. A growing body of economists believes that if we allow the income gap between rich and poor to widen further, the entire economy will be held back as a result (p. 2).

Summary

America's global position is strong, and its economy is growing. Still, a cloud of uncertainty hangs over our future marked by a widening gap between the increasing levels of skills needed to maintain our position in the global economy and the growing populations of unskilled youth and working poor. Americans from all walks of life need higher-order job skills to gain productive employment, and these skills are acquired through education. If we fail to provide a bridge for the working poor to cross over into the mainstream of our economy and society, the twenty-first century work force will be unable to contribute to the country's economy, and the disparity in wages earned by different segments of our labor force will threaten the social fabric of the country. The authors of *Workforce 2020* speculate that an America with a large proportion of citizens who are unemployable or capable of working only in the most menial, low-wage jobs would be an America fraught with social tensions and burdened by expensive demands on social welfare (Judy and D'Amico, 1997). Upward mobility in the labor force depends, quite simply, on education, and developmental education is that essential doorway of opportunity for millions of Americans.

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Chapter 3

What Works in Developmental Education

Robert H. McCabe and Philip R. Day, Jr.

Community colleges have a strong commitment to student access, a clear focus on the demands of the workplace of the future, and a considerable record of success, yet they continue to face increasing calls for accountability and productivity. In response to external pressure and economic exigencies, some have even reconsidered their investment in remediation altogether. Many colleges have completely redesigned their developmental curricula, instructional delivery systems, and support services. Others have partnered with private corporations to deliver these learning services. All are seeking greater returns on their developmental education investments. Clearly, with growing numbers of incoming students ill-prepared for college-level study–much less twenty-first century jobs–a movement is stirring to improve services while ensuring that students acquire essential skills and achieve higher levels of performance. Colleges recognize that to meet the escalating demand for educational opportunity and survive in the climate of accountability and bottom lines, they will need to become more effective teaching/learning organizations.

As the difficulty of the task has grown, there has been a transformation in the approach to remediation in many community colleges accompanied by an elevated investment in the success of underprepared students. Over the past decade, increasingly sophisticated developmental programs have been initiated in response to demographic shifts and workforce demands. Still, unacceptably high percentages of underprepared students continue to exit through the community college's "revolving door" and leave as dropouts or failures. In growing numbers of colleges, however, a sharp focus on improving student outcomes, combined with broadened developmental studies programs, integrated curricula, and innovative instructional strategies, has produced improved results, greater institutional productivity, and demonstrable cost effectiveness. The sampling of exemplary developmental education programs showcased in this monograph demonstrates the power of these synergies and attests to the effects of programmatic leadership and institutional commitment.

The Remedial Transformation

Originally defined as a process that seeks to redress academic deficiencies by teaching essential skills, remediation has been traditional and integral to college for a very long time. Once focused on Latin, the principal targets of remediation today are language arts and mathematics. Previously delivered through tutorials, remedial programs now employ structured curricula and computerized supplements. Historically confined to rectifying discreet skill deficiencies, program goals now include mastering learning strategies and developing self-confidence. Successful college-level remediation programs are concerned with the full personal development of students, hence the now common term *developmental education*.

The shift from traditional to contemporary developmental education programming has emerged concurrently with improved understanding of the nature of the problem. With students increasingly deficient in linguistic and mathematical concepts as well as learning strategies, educators today acknowledge that the remediation issue is "more complex than windy rhetoric and simple solutions suggest" (Adelman, 1996, A56). Almost thirty years ago, Pat Cross (1971) warned that remediation is a "high-risk" enterprise, particularly for the new college student. Cross outlined a prescription to reorient students to learning through programs that specify clearly what is to be learned in organized, comprehensive learning sequences; provide ample practice, as well as support and encouragement; and deliver feedback on performance through the assessment of improvement on significant skills and abilities.

Her premise was twofold: the better students understand the process of learning, the better they can monitor their progress; and the more they monitor progress, the more likely they are to continue to learn and develop. In 1976, Cross further refined her recommendations for supporting developmental learners, and these became the template for a number of successful developmental programs.

Cross offered five key recommendations for designing effective developmental programs: (a) programs should integrate skills training and instruction with other college experiences of the student, (b) attention should be given to the social and emotional development of the student, as well as to academic achievement, (c) staff should be selected for their interest and commitment to working with remedial students, as well as for their knowledge of learning problems, and (d) remediation should be approached with flexibility and open-mindedness–a spirit of exploration into student learning and success skills should be cultivated (pp. 42-45).

Studies of today's model preparatory programs indicate they are most likely to provide remediation in a developmental context with a complementary learning assistance program. The ideal comprehensive developmental education programs capitalize on contemporary understanding of individual growth and learning theory and address both cognitive and affective development. Curricula in these programs respond to varied levels of student skill development, and instructional delivery systems support variable rates of learning as well as diverse learning styles. Clear criteria link the skills and abilities acquired through preparatory study to those required in college-level courses. A full range of essential support services is offered, comprising extensive personal development and study skills courses, as well as tutorials, counseling, and advisory assistance. And, multiple assessments offered before, during, and after preparatory study guide appropriate placement, steady progress, and essential competence. In short, successful developmental students now begin "where they are" and move "as far as possible" through learning environments that stimulate the fullest possible growth of the individual. In the process, students acquire learning strategies that are equally as important in the workplace as in the academy, and as a result, they complete their college preparation and move into their chosen fields in record numbers (Boylan, 1986).

The ideal comprehensive developmental education programs capitalize on contemporary understanding of individual growth and learning theory and address both cognitive and affective development.

We are currently witnessing the results of thirty years of investment in comprehensive developmental studies programs in community colleges. Growing numbers of students enroll in developmental classes each year and succeed. Following their preparatory study, record numbers of these students are succeeding in collegiate coursework and graduating, ready for college transfer and entry into the work force. Students in exemplary developmental studies programs are acquiring higher-order skills in analytical reasoning, critical thinking, and problem solving in addition to the basics of reading, writing, and mathematics. Moreover, they are developing confidence, resourcefulness, and tenacity, as well as the ability to compute, to work collaboratively, and to provide leadership–the new "basic skills" for the future.

Key Program Components

Two key characteristics that provide a framework for the consideration and assessment of postsecondary developmental programs are *comprehensiveness* and *institutionalization* (Kemig, 1983; Tomlinson, 1989). Just as research has documented an inverse relationship between the extent of remediation required and the likelihood of graduation, extensive study of developmental education programs has documented a correlation between the comprehensiveness of the program and the impact on student learning and development. Isolated basic skills courses have been found to be least likely to have a long-term effect on student achievement and persistence. Skill development courses that include individualized learning assistance, such as tutoring, have demonstrably more success. Skills courses with learning assistance and course-related support services integrated into the coursework have even greater effect. Comprehensive learning programs that offer a variety of services designed to meet the cognitive

and affective needs of a diverse student population and are delivered college wide have the greatest possible impact. Thus, with increasing scope and complexity of programs comes increased institutional investment, accompanied by increased short- and long-range program outcomes. It is these two characteristics that, therefore, define the context within which other specific components of successful developmental education programs are understood.

Multiple surveys of developmental education have examined the general characteristics of successful programs over the years (Boylan, 1985), and an even more recent national study documents the characteristics and practices of developmental programs as well as their contributions to student success (Boylan, Bliss, and Bonham, 1997). Paramount among the findings is the discovery that most successful developmental programs offer a wide variety of comprehensive instructional support services, including assessment, placement, orientation, tutoring, advising, counseling, peer support, early alert programs, study skills training, and support groups. Of particular interest is the strength of the relationship found between student success and three specific services: mandatory assessment, advising and counseling, and tutorial programs–particularly those with trained tutors. Findings suggest these initiatives speak most directly to the needs of developmental students, particularly in terms of their achievement within developmental courses, and lead to higher first-term grade point averages.

Another factor found to positively influence student success was the organization of the developmental education program. Those with centralized structures demonstrated greater student achievement, seemingly through better coordination of services, enhanced collaboration of staff, and ability to define the program area within the institution. Although fewer than 20 perc nt of the programs surveyed conducted regular, systematic program evaluations, students in evaluated programs are more likely to be successful than those in programs without evaluation programs. In addition, program evaluation was demonstrated to be positively correlated with student retention and student achievement in English and mathematics. This study found a negative relationship between mandatory placement and overall retention in the community colleges examined, but no relationship was demonstrated between mandatory placement and performance in developmental courses. This inconsistent finding reinforces the controversial nature of mandatory placement policies and underscores the importance of student acceptance of the starting point for college.

Another comprehensive examination of strong developmental programs conducted through The University of Texas at Austin (Roueche and Roueche, 1993) yielded several additional critical components of successful programs. Several key elements were found to be linked to program success: (a) a wide array of structured courses, (b) awarding credit for developmental studies courses, (c) flexible completion strategies, and (d) linkages between preparatory and college-level courses. Many successful programs offered multiple learning systems and varied instructional methods combined with systems to monitor student behaviors and provide timely intervention strategies. Careful staffing was found to be critical to the success of exemplary programs. Successful programs were characterized by instructors who chose to teach remedial classes rather than being assigned to them, motivated tutors who were trained to assist their peers, and strong administrative support. Finally, a consistent process of program evaluation linked to continuous improvement was common among successful programs. Based on their findings, the researchers urge community colleges to respond to the realities of shifting student demography and socio-economic needs by experimenting with exemplary program designs and continuing to involve students in the learning process. They further recommend application of state-of-the-art instructional strategies that capitalize on contemporary knowledge of learning theory; selection of excellent teachers who are interested and committed, as well as objective, knowledgeable, innovative, and empathetic; and use of effective program evaluations designed both to assess the impact of the program and improve its effectiveness for the future. The overarching message of this extensive analysis is a call for increased support and structure for underprepared college students–students the authors address as "at-risk."

Similar findings from Starks' 1994 review of research on developmental education underscore

the importance of teaching and learning in the developmental program. Starks specifically identifies eight pedagogical elements that contribute to successful developmental studies programs: (a) use of cooperative or collaborative learning, (b) use of electronic media to support learning, (b) a focus on metacognition or learning strategies, (c) small classes, (d) frequent student-faculty contact in the classroom, (e) attention to students' personal learning styles, (f) frequent evaluation of students with continuous feedback, and (g) evaluation of teaching. Functional components such as fundamental courses in reading, study skills, writing, and mathematics; learning assistance, tutoring, and assessment centers; as well as supplemental instruction, technology, and evaluation were found to contribute to student achievement and persistence. Beyond these elements, developmental programs that include comprehensive and interdisciplinary approaches demonstrate the most success in supporting student learning and development.

Cesazza and Silverman (1996) examined four different program models with varying organizational structures and program components and concluded that the assessment of individual student needs, provision of a tutor training program, and strategic organization and management of services are primary contributors to successful programs. The authors acknowledge the importance of context in assessing program effectiveness and propose a more adaptive model for effective practice that builds on the programs they examined. The proposed model focuses on interactions among theory, research, principles, and practice–it is designed to reveal what we do, why we do it, how what we do leads to desired outcomes, and why one approach may be more effective than another in different situations. The model is organized around the learner and the teaching-learning process and builds connections between theory/research and principles/practice. For example, knowing that the successful learner interacts with the environment in a unique way promotes the construction of programs that capitalize on diverse learning styles and the individual needs of the learner. Since effective instruction facilitates transfer to new learning situations, the authors suggest that programs be designed that encourage active participation and emphasize critical thinking. Model programs will systematically integrate the needs of the learner and adapt the principles of sound teaching to maximize student potential. This approach reflects the design of the recent *Self-Evaluation Guide* (1995) produced by the National Association for Developmental Education to assess tutorial, curricular, instructional, and support services that comprise developmental programs.

In summary, the myriad studies of developmental programs suggest that, for maximum effectiveness, programs should:

- be context-specific and highly valued by the learning community;
- be centrally structured or well coordinated within the organization;
- use instructors committed to the students and the field;
- provide multilevel curricula with credit options and exit criteria;
- ensure the integration of a variety of instructional methods;
- integrate learning and personal development strategies and services; and
- employ an evaluation system focused on outcomes as well as continuous program improvement.

Exemplary Programs

Ten model college developmental education programs were identified with the assistance of Hunter Boylan, director of the Center for Developmental Education at Appalachian State University, and colleagues across the country. These institutions were selected to serve as examples of successful developmental programs on the basis of their performance and documented outcomes. Once identified, each institution was asked to provide a basic description of the institution, a comprehensive review of its remedial program, the critical features that are perceived as keys to success, and an overview of the program evaluation design accompanied by data on program performance and cost. A brief description of each program follows; chapters detailing each college program are found in *Section Two* of this monograph.

Bucks County Community College is located in a small town outside Philadelphia where most local high school graduates pursue their college education. The college offers a diverse array of 68 programs and enrolls almost 9,000 students, most

in transfer programs. The developmental program implements the mission of the college and provides each of the program components identified in the literature as critical to success. Special features of the program include an early alert system, integrated advising and counseling services, a comprehensive academic assessment and placement effort, and a training-based tutorial program. An annual program evaluation system is linked to the college's institutional effectiveness program and provides both quantitative and qualitative data on student achievement and persistence for ongoing program assessment, as well as for empirical research.

The Community College of Denver, with fourteen locations throughout its service area, serves a diverse population of over 10,000 students. The college demonstrates powerful student success outcomes with a highly "at-risk" population, in that students who come to the college underprepared for college-level work are as successful as those who come fully prepared, and students of color graduate or transfer at rates comparable to those of whites. The developmental program provides precollegiate coursework linked to the college's Academic Support Center, Testing Center, and GED program in a variety of settings. The Academic Support Center provides an array of services, from English as a Second Language to support for the learning disabled, and emphasizes a "high-tech, high-touch" approach that yields an 82 percent success rate each semester. An annual program evaluation conducted at the division level with institutional support examines performance data for program assessment and planning.

Delgado Community College serves a diverse urban population of approximately 14,000 students at two campuses and several outreach centers in metropolitan New Orleans with more than 70 programs. The developmental program builds the skills and attitudes essential for success in college and the work force through its basic education program. Focused on language and computational skills, as well as the sciences and human behavior, the program also provides remediation in other disciplines. Counseling services, study skills courses, small classes, computerized instruction, and labs are important components of the program, and the developmental approach is integrated with college-level coursework. A self-evaluation program conducted by a task force and faculty analysis of relevant data provide an annual assessment for program refinement.

Greenville Technical College, located in South Carolina, serves over 9,000 students, almost half of whom enroll in developmental studies courses. Recent public pressures combined with adverse perceptions of the program from students, college staff, and the community, prompted Greenville Tech to establish a collaborative partnership with Kaplan Learning Services to improve both the image and the program. Special features of the partnership include the College Success Skills workshop, a redesigned curriculum delivered in the lab or classroom, intensive staff training, and an evaluation system integrated throughout the program. The collaborative design, support, and coordination of the program are special features, as are the unique curriculum materials and learning contracts employed in classes. Assessments of performance and quality are conducted on a continuous basis.

Guilford Technical Community College, located in the Piedmont Triad of North Carolina, offers 165 credit programs to 10,000 students. The developmental program provides basic skills instruction on a mastery learning basis delivered in a variety of formats with a skills lab/tutoring center and support for students with learning disabilities. Recently recognized by the National Association of Developmental Education as an outstanding program, special features include support for part-time faculty and English as a foreign language courses. A statewide tracking system will eventually monitor student progress, but the program is currently evaluated each year by faculty working with the institutional research office to assess program outcomes and make recommendations for program modifications.

Portland Community College in Portland, Oregon, enrolls almost 40,000 students across three campuses and almost 200 sites throughout the area. A developmental studies program is offered by the College Success Skills Department. Comprehensive tutorial services and technical learning skills specialists provide a variety of support services as part of the comprehensive effort. Program evaluation, implemented in conjunction with institutional research, assesses institutional effectiveness and guides program improvements throughout each year.

Prince George's Community College, a suburban institution located just beyond the Capitol Beltway surrounding Washington, D.C., enrolls about 12,000 students each major semester, most of whom are African American. The Educational Development program serves almost two-thirds of the entering students and is committed to addressing student needs by providing classroom instruction, lab work, advising, and tutoring. Distinguishing features of the program include a multi-tiered structure, an integrated program, a placement confirmation process, required lab work, collaboration with credit faculty, and continuous improvement. Additional initiatives that strengthen the program include the R³ Academy (Reasoning, Readiness, Real World), use of PLATO computerized courseware, and developmental handbook for students. Program evaluation is conducted annually through the institutional research office and focuses on institutional effectiveness measures and the success of special populations.

Sandhills Community College, a rural institution in south-central North Carolina, enrolls 3,500 students in over 30 programs and places over 60 percent of its entering students in developmental studies. Academic Support Services provides assessment, counseling, advising, a tailored instructional program, accommodations for the learning disabled, tutorial services, and faculty development. Key features include a unique department structure characterized by teams of "developmental specialists" and a college-wide advisory committee, highly motivated faculty and support staff, strong administrative support, use of learning community course design, and highly trained special needs advisors. Each year the program evaluates the success of individual students, cohorts, and the program as part of the college's institutional effectiveness program, Benchmarks of Excellence.

Santa Fe Community College, a charter member of the League for Innovation in the Community College, is located in north-central Florida, where it serves about 12,600 credit students, almost two-thirds of whom are enrolled in transfer programs. Its preparatory (developmental) program addresses the needs of over half the entering student population, with comprehensive assessment, remediation, academic support, advising, and career counseling program. Key features include a strong research base, Career/Academic Planning (CAP), and an active college/high school collaboration program. The program evaluation, a component of the college Institutional Effectiveness Plan, consists of a comprehensive tracking system as well as student evaluations of instructors and labs.

Trident Technical College in Charleston, South Carolina, offers over 90 programs to 9,000 students at three campuses. The Department of Developmental Studies provides instruction in the basic skills that is complemented by the services of the Learning Assistance Center, Testing Services, Student Support Services, Distance Learning and Broadcast Services, and the Learning Resource Center. The SCANA Creative Learning Laboratory, a comprehensive computer facility for developmental students, offers supplemental instruction, practice, and testing related to the disciplines involved in the program. The program is evaluated annually through the college's institutional effectiveness study; the annual assessment is based upon the Goal Attainment Scale used to establish objectives, develop standards, and judge results.

In these exemplary programs, all of the key characteristics and components documented in repeated studies of successful developmental programs are represented: centralized structures, assessment and placement systems, varied coursework, trained tutors, linked instructional support services, intrusive advising and counseling, and supportive faculty and staff. These programs are both comprehensive and institutionalized, and they all have strong evaluation programs. Further comparison reveals several other notable features shared by these successful programs:

- Each recognizes that the programs must deal with all aspects of student development–personal, as well as academic.
- Most of the programs are thoroughly integrated within the institution, from the mission and philosophy through the planning, research, and evaluation functions.
- The program designs are based on theoretical foundations and educational research.
- Underprepared students are identified through a standardized assessment and placement process.

In these exemplary programs, all of the key characteristics and components documented in repeated studies of successful developmental programs are represented: centralized structures, assessment and placement systems, varied coursework, trained tutors, linked instructional support services, intrusive advising and counseling, and supportive faculty and staff.

- Almost every program mentions the integration of coursework within and beyond the developmental program, and most award college credit for course completion (though most developmental credits do not satisfy degree requirements).
- Most of the programs use computer-assisted learning.
- Most of the programs acknowledge the importance of faculty and the quality of their teaching, yet many also note that significant numbers of the faculty work part time.
- Almost every program links advising and counseling to the program.
- Almost all of the programs are linked by the college institutional research department to institutional planning for purposes of evaluation.

Finally, virtually every program selected documents high levels of student success at relatively low costs. Student success levels regularly reach 80 percent in English, reading, and mathematics, and about 90 percent of students receive GPAs of 2.0 or better. Performance levels in college courses are equal to or better than those of traditional students, while retention rates are as high as 82 percent. Graduation rates are also high, with many students performing well in baccalaureate studies.

SUMMARY

The exemplary programs highlighted in this publication show considerable achievement. Nevertheless, much remains to be explored. Critical thinking and analytical reasoning, though familiar concepts, have yet to make a major impact on student success in developmental programs. Collaborative learning and learning communities are still in their infancy in the developmental arena, as are student portfolios, supplemental instruction, and accelerated learning. Partnerships with private concerns, such as Sylvan Learning Systems and Kaplan Learning Services, are relatively new to higher education, but community colleges are in the forefront of those pioneering such public/private partnerships to meet the remedial learning needs of their students. Finally, a new generation of computer-assisted learning programs that incorporates principles from our new understanding of learning and cognition holds great promise, but has only begun to contribute to the success of developmental programs.

Many colleges are experimenting with such strategies to strengthen their programs for underprepared students, often using a combination of approaches. At Daytona Beach Community College, for example, many of these innovative initiatives are underway. Student assessment and placement are accompanied with the development of a personal learning plan to guide the student through the first year of study. Collaborative learning strategies and use of student portfolios pervade the developmental program, which consists of an integrated reading, writing, mathematics, and personal development curriculum. A large multimedia Learning Center is integrated with the curriculum to support and supplement student learning with state-of-the-art technology. Tutorial services also support classroom teaching, including specialized tutoring services for first-generation college students or students with disabilities. Counseling and advising personnel focus on student success tracking in addition to academic and career planning and work with faculty to support student persistence to graduation. Within the year, pilot programs offering accelerated learning options will be expanded, and soon thereafter, comprehensive student services–including learning assistance–will be available through the Internet as well as in person. From there it seems a small step to an electronic future.

Years ago, Pat Cross brought home the fundamental concept of developmental education when she described the community college as a highway with multiple exits and entrances–a road crowded with a variety of vehicles in all shapes and sizes, each going at different rates and beginning and ending at different points. Through the use of emerging educational technology–both

high- and low-tech–the image Cross painted may yet be realized. Imagine an institution, for example, in which students receive their entire learning program for a course of study on disk as they register. They may study on campus, at home, or in the workplace–wherever and whenever they desire, in real time or delayed transmission. They may move at their own pace through their program of study, receiving support services at a distance or face-to-face. They may choose instructors who complement their personal learning styles, use software that capitalizes on their learning preferences, and seek advising and counseling or learning assistance, as they perceive a need. And most importantly, they may determine when to exit the program and chronicle their own learning and development in their electronic portfolio.

Over the next decade, such electronic media will certainly influence the developmental enterprise. Opportunities for new design and delivery of developmental education services that combine innovations in technology with advancements in our understanding of the teaching/learning process promise a new generation of programs. As the population of Americans who are underprepared for college or the changing work force grows, the need for effective postsecondary remediation programs becomes greater than ever. Fortunately, community colleges have more than 50 years of research and experience in designing responsive, successful, cost-effective remediation programs that have lead to numerous exemplary working models–including the ten programs profiled in this document–which help us understand what works in developmental education.

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Chapter 4

The Case for Developmental Education in the Twenty-First Century

Robert H. McCabe and Philip R. Day, Jr.

Few subjects engender more public debate than the remediation of skill deficiencies that inhibit academic performance and success in the workplace. Developmental education programs that address these needs are increasingly essential to the full development of our nation's human resources, yet these programs are often misunderstood. The costs are grossly overestimated, and the solid successes are trivialized. In addition, these programs have become an outlet for frustration with the failures of the K-12 system. A strong current of public opposition regularly challenges the collegiate role in developing basic skills and advocates drastic limits on or elimination of remedial instruction at the postsecondary level. Critics contend that higher education should not be expected to deliver what secondary school failed to provide, that too much is being spent on remediation for too little gain, that those with skill deficiencies have had their chance–maybe two, and that those with skill deficiencies should shoulder the responsibility for their failures and pay the full cost of remediation.

The Debate

Nowhere is the public policy debate more evident than at the federal level. Some members of Congress would target federal financial aid funds to those "most able to benefit." A 1997 report published by the General Accounting Office frames the issue:

> Some members of the Congress seek to improve targeting of Title IV funds by restricting the use of financial aid to postsecondary education courses. In speculating that a large percentage of students receiving financial aid use it to pay for remedial courses, these members want to eliminate the financial aid awarded to students needing such courses and reallocate it to more qualified students. According to these members, the Congress could materially augment or enhance the financial aid packages of students remaining eligible for Title IV funding without providing additional appropriations (Blanchette, C.M., 1997, p. 1).

Proponents of allowing financial aid recipients to take remedial courses have defended the current policy. They say the policy is critical to promoting access to higher education, especially for economically and socially disadvantaged students. Because many students who require college remediation graduated from schools in resource-poor school districts, these proponents contend that such students have deficiencies in basic skills through no fault of their own. In addition, these proponents point out that nontraditional students often need such courses because their skills have deteriorated from being out of school for long periods.

Attacks on remedial education at the policy level continue to appear, and many states have responded by limiting these programs in a variety of ways. Recently, New York Mayor Rudolph W. Giuliani has been blasting the city community colleges for their disgraceful graduation rates and lack of academic standards. The mayor points out that among entering community college students, 87 percent require remediation, and only one percent graduates within two years. He blames these problems on the colleges' remedial education programs, which he says devote far too much money and effort to teaching skills that students should have learned in high school. Mayor Guiliani is demanding that the colleges improve student outcomes and place limits on the amount of remediation available to each student or face loss of city funding. The colleges have been unsuccessful in remediating underprepared students, he argues, and privatization of these services is the answer.

What the mayor and similar critics fail to acknowledge, however, is that these data do not

tell the whole story. Virtually all of the students under question work and attend classes part time, and, if they test academically deficient, must take remedial courses before beginning a two-year associate degree program. In addition, a majority of students enroll to gain specific skills and are not seeking a degree. In these circumstances, why would one expect students to complete full-time two-year programs in two years? Professor Dan Smith, chair of the Developmental Skills Department at the Borough of Manhattan Community College, points out this misunderstanding of the purpose of developmental education and paints a different picture of developmental studies students:

> These are a magnificent group of students. Their personal histories are amazing: people who come from impoverished neighborhoods, people whose whole lives have been filled with crime and drugs. . . . Many have worked their way through refugee camps. They have families and work in kitchens and cleaning offices, and then they come in here after all that and show up with their homework completely done. . . .Trying to better themselves–and working and raising a family and going to school at nights and taking several years to get through–is the American way. . . . I thought one was to be praised for diligence in the face of adversity. It's the Horatio Alger maxim, the Golden Rule that helped make America what it is today. (*Community College Week*, February 7, 1998, p. 7)

Giuliani and Smith express contradictory views about developmental education programs and postsecondary remedial students that characterize the national debate on the topic. College personnel who work closely with underprepared students are aware of their struggles for self-improvement and support their efforts to overcome formidable hurdles to get an education. Social visionaries see these individuals as human assets that must be developed for the benefit of the entire society. In contrast, some observers and public decision makers view these students as failures responsible for their own lack of education or individuals simply wanting to take advantage of an educational "welfare system." College leaders are so accustomed to attacks on remediation that they are reluctant to talk about it, or they make excuses for offering these programs. As a result, remedial education has been called "higher education's dirty little secret." Perhaps the mayor has done a service by raising the issue into a spotlight for national debate. The growing importance of developmental education to the future of this country cries for open discussion on the topic. Fundamentally, the question is not one of the effect of remedial education on individual students or colleges, but the effect on the nation overall. Five critical questions frame the debate on postsecondary remedial education:

- Why is it needed?
- Will it continue to be needed?
- How expensive is it?
- How effective is it?
- What would result without it?

This monograph explores answers to these questions by examining data on underprepared students and community colleges programs involved in meeting these students' learning needs, as well as social and economic trends underlying the developmental education debate.

Remedial education has been called "higher education's dirty little secret."

Why Is Developmental Education Needed?

The students. One of the great strengths of our country has been the commitment to fully develop the talents of every American. The single most intractable problem challenging the success of the national investment in education is inadequate preparation for postsecondary education and training. Each year as postsecondary enrollments grow, the numbers of underprepared students grow proportionately. Across the country, record numbers of students enter community colleges underprepared for college-level mathematics, reading, and writing–40 percent or more of those who enroll–and their ability to achieve and persist in college is jeopardized by these academic deficiencies (Smith et al., 1997). Some of these students never had the opportunity or motivation

to acquire adequate skills in public school, while others simply need to refresh academic skills they have not used in several years.

Many underprepared community college students come from economically deprived circumstances and have attended less than adequate schools. Some were not enrolled in college-bound programs and failed to develop college preparatory skills. Others received diplomas and went to work, only to find they need to refresh their basic academic skills when they decide to enter college years later. Substantial numbers of entering community college students require limited remediation, often in only one of the three traditional basic skills, and these students are likely to improve and complete their education rapidly. Others, however, require extensive remediation in each of three basic skills and are likely to struggle over a prolonged time period to acquire the knowledge and skills they need to progress academically.

In many ways, these underprepared students are indistinguishable from their peers. Similar in age and gender, they differ primarily in ethnicity and economic status. Minorities and individuals living in poverty are disproportionately represented in the developmental studies population. Most underprepared students were "C" students in high school, and many perform poorly on standardized assessments, such as the SAT. Nonetheless, like their "prepared" peers, they often seek degrees and make significant personal and financial sacrifices to enroll. In fact, the percentage of underprepared students who receive financial assistance–40 percent–is lower than that of the overall student population.

Work and the economy. From a national workforce perspective, the value of postsecondary education is increasing exponentially in this rapidly changing society, as was detailed in Chapter Two. Following World War II, 80 percent of American jobs were unskilled and semiskilled. Since that time, work has become increasingly complex with higher-order skill requirements, and the ratio of skilled to unskilled jobs has changed radically. The majority of jobs now require special skills, and business and industry forecasts indicate that within a few years, 80 percent of high school graduates will need some form of postsecondary education to be employable. In addition, new jobs will be introduced, and existing jobs will continue to evolve, such that most workers will need additional education or training several times during their careers. The gap between the skills and competencies needed to sustain our economy and those possessed by Americans is widening, and this threat to the well-being of the country seems unlikely to abate any time soon.

Will Developmental Education Continue to Be Needed?

Everyone hopes that entering college students will be better prepared in the future and that the need for remedial education will diminish. Demographic, social, and economic trends outlined in Chapter One, however, point to a twenty-first century America with greater numbers of underprepared adults and a greater demand for remedial education. Ethnic and racial minorities will grow to become the majority population within the next two decades, and these groups have been disproportionately challenged by poverty and educational insufficiency. Virtually all of America's population growth in the next century will come from immigration and, unlike in earlier years, immigrants will come predominantly from developing countries. Many of these new Americans will be poor and unprepared for adequate employment.

Despite our current prosperity, many American children live in poverty, and poverty, of all factors, has the highest correlation with school deficiencies that extend through higher education. One poverty factor with significant effect on children and implications for the educational challenges facing this country is the breakup of the nuclear family. In 1991 only half of all American children lived in a two-parent family. The others–13.7 million–lived with a single parent, usually female and often poor. On average, single parents are able to give their children only one-fourth of the resources provided by two-parent families. It is not difficult to forecast school and life problems for children being raised with such limited resources and to foresee continuing remedial education needs for many of these children as they reach adulthood. Other social and economic challenges are also leading to poor parenting, even among traditional families. Recent research indicates that poor parenting, particularly during critical early developmental periods in the first four years of life, can impede brain development and lead to learning problems and impaired cognitive

abilities with lifelong implications (Education Commission of the States, 1996).

While the number of Americans underprepared for college and work is increasing, the proportion of older individuals in the population is also increasing–a situation that leads to growing numbers of Social Security recipients requiring support from declining numbers of work-age individuals. By 2030, the population of Americans age 65 and older will soar from the present 33.5 million t · 69.3 million, while those in their prime work years will remain constant at 160 million. The result is a drop in the proportion of work-age to retirement-age citizens from 4.77 to 2.28 workers for each older American. For the economy to remain strong and the Social Security system to remain viable, every individual in their work years must possess twenty-first century work skills and be part of the work force. Yet, the proportion, as well as the absolute numbers, of adult Americans with inadequate workforce skills seems certain to escalate. Coupled with the increased need for lifelong continuing education to keep pace with changing jobs and job skills, the net result for the future will be a dramatic increas · in higher education enrollment and a significantly higher percentage of underprepared students entering college.

The necessity for and importance of developmental education in the twenty-first century seem clear, but the next question is, can we afford it?

How Expensive Is Developmental Education?

The greatest misconception about developmental education is that it is costly. Many legislators see that more tha 40 percent of community college students begin underprepared, and they conclude that 40 percent of the expenditures in community colleges are used for remediation. Nothing could be further from the truth. The proportion of student programs that are remedial is small. Students typically complete their developmental courses in their first semester, and only one in three developmental education students requires remediation in all three basic skill areas. A 1993 Florida study documented that, on average, academically deficient students enroll for fewer than seven remedial credits (McCabe, 1995); similarly, a 1997 federal study found students taking an average of only 4.9 remedial credits (Blanchette, 1997). Thus, the cost to the state or other local funding source for remedial education is only about 16 to 23 percent of the annual costs for supporting a full-time student. In most states the annual public cost to remediate a community college student is less than $1,000–a far cry from what is assumed by most critics.

The data on federal financial aid are equally revealing. The 1997 Department of Education study found that only eight percent of federal financial aid to community college students is used for remedial courses. When community college and university data are combined, the percentage of federal financial aid funds used to support remedial courses totals only four percent. These minimal expenditures help hundreds of thousands of Americans gain necessary skills to begin on a path toward self-sufficiency. This is the greatest bargain in American education.

How Effective Are Developmental Education Programs?

Contrary to frequently repeated indictments of the failures of developmental education, a number of national studies reveal encouraging outcomes from these programs. Participating students earn higher grades and persist longer than their nonparticipating peers (Boylan, 1985). In fact, students who complete remedial courses are subsequently as successful as those who begin academically prepared. Even more important, more than half of the underprepared students enrolled in remedial courses complete their programs within the first year. They then demonstrate performance equal to that of the general population (National Center for Education Statistics, 1995). Almost all (90 percent) of the students who complete developmental writing succeed in freshman composition, a substantial percentage (83 percent) of those who complete reading succeed in their initial social science courses, and many (77 percent) of those who complete developmental math succeed in college-level mathematics (Boylan and Bonham, 1992).

On average, more than 75 percent of the entering underprepared community college students nationwide are retained through their first year with a GPA of 2.0 or better, although they continue into the second year at a somewhat lower rate than the general college population. As do most other community college students, underprepared students tend to leave college in good standing, and they are more likely to persist at community colleges than at baccalaureate

Students who complete remedial courses are subsequently as successful as those who begin academically prepared. Even more important, more than half of the underprepared students enrolled in remedial courses complete their programs within the first year. They then demonstrate performance equal to that of the general population

institutions. They are also more likely to continue at community colleges than the general community college population (Boylan, Bonham, and Bliss, 1994). A Florida study found that fully one-third of the community college graduates who transferred to the university system had completed developmental programs (McCabe, 1995). These data are consistent with graduation rates from the model community college developmental studies programs highlighted in Part Two of this monograph. Overall, approximately one-third of the community college graduates began in developmental courses. These statistics document the impressive success at community colleges and clearly indicate that the investment in remediation is paying off.

Because they seldom invest sufficiently in institutional research, community colleges are at least partly responsible for a consistent misinterpretation of performance. Without sufficient data from community colleges, those outside the college–policy makers, outside analysts, and the media–may use inappropriate criteria for evaluating community college student success. The central false assumption is that a two-year degree program should be completed in two years. This unfounded assumption led to Mayor Giuliani's shock and outrage at the New York community colleges' "one percent graduation rate," which he blamed in large measure on students stranded in remedial education. Actually, most community college students attend part time, and many enroll only for specific short-term objectives; therefore, few of these students are in a position to earn a degree in two years. At Miami-Dade Community College, for example, a typical Associate Degree graduate enrolls in eleven semesters. Undoubtedly, the New York one-percent graduation rate is fiction; nevertheless, similar misconceptions are common.

Community colleges' performance in developmental education will and should be evaluated. Colleges must make the development of quality data based on appropriate criteria a high priority. Only in this way will there be an opportunity to improve programs and help the public understand the effectiveness of these programs. Increasingly, higher education is expected to respond to social and economic pressure for improved performance and accountability. Community college developmental education programs deliver on the promise of access and equality of opportunity. Almost half of all entering community college students are underprepared and, because of developmental programs, almost half graduate (Boylan and Bonham, 1992). It is clear that these programs prepare students for success in college-level courses and fuel student persistence, and these successes need to be documented and shared.

What Would Happen Without Developmental Education?

Without developmental studies programs, only about 10 percent of the entering underprepared college students would graduate, leading to either massive failure rates or an equally dramatic decline in standards (Cross, 1976). Each year, almost two million more underprepared students would leave postsecondary education, their futures in the balance. Undereducated, they would likely join the competition for the few unskilled jobs available–or be forced onto the welfare rolls.

The large number of dependent Americans threatens the well-being of our country. In this land of plenty, every community has neighborhoods in which people live in appalling circumstances. The growth of the American underclass–fueled by increasing poverty, drugs, unemployment, and a breakdown in family life is threatening to fracture our social structure. Poverty costs society its sense of well-being as well as its human resources.

Every year, the nation spends billions of dollars on dependent individuals. In one study, the annual cost of supporting a dependent family was nearly five times the expenditure of public funds on an average independent family (McCabe, 1995). In addition, unemployment and inadequate education are strongly correlated with incarceration. The fastest growing U.S. population is prisoners, who now number more than 1.5 million, and cost approximately $30,000 per prisoner each year. The only real solution to the

expanding underclass, welfare roles, and prison population is to assist more individuals to become independent and self-sufficient. Developmental education programs are essential to that process.

The direct financial return alone on money invested in postsecondary education (e.g., through taxes paid, economic growth) is roughly 10 to 15 percent per year adjusted for inflation–a return well above that available on most other investments available today (Hoy and Bernstein, 1982). Looked at through this perspective, the $12 billion dollars that states invest to educate almost ten million community college students in credit and noncredit programs each year pays off handsomely for society, as well as for individual students.

It is difficult to comprehend the catastrophic costs to the country should remedial education be discontinued in the twenty-first century:

- Insufficient workers would be available to fill jobs, threatening business, industry, and the economy.
- American business and industry would not have the skilled work force to compete in a global economy.
- The country would be overwhelmed by the direct cost of supporting growing numbers of dependent persons–in and out of prison.
- The soul of the country would be permanently damaged by further growth of a permanent underclass.

Community Colleges Should Be the Primary Providers of Developmental Education

Virtually every community college provides a comprehensive array of programs and services to remediate academic deficiencies and contribute to individual development. In addition to assessment and placement in reading, writing, and mathematics, preparatory coursework is also offered in the sciences, study skills, and English as a second language. Increasingly sophisticated instructional techniques and technology promote mastery and individualize learning. In many community colleges, collaboration and critical thinking skills are integrated throughout the curriculum. Comprehensive developmental studies programs include important supplemental services, such as tutoring and counseling services that address significant issues, such as personal identity, independent thinking, and motivation.

Community colleges are the *right* institutions in higher education to provide effective developmental education programs for a number of compelling reasons:

- They have the *right* programs to prepare students for work.
- They are in the *right* locations. They are close to a high percentage of the population and have campuses or centers in communities with the highest percentage of underprepared students.
- They have the *right* values and attitudes. They believe in the importance of helping all students succeed.
- They have the *right* experience. They have worked effectively with underprepared students for decades.
- They have the *right* formula for success. Through 50 years of research and experience, they have developed effective, efficient developmental education models.
- They are the *right* place to invest our remedial education dollars. As the most cost-effective postsecondary institutions, community colleges provide the best economic return on remediation investments.

With increasing workforce demands and growing diversity, postsecondary developmental education is a social and economic imperative for the nation. Community colleges are the best, if not the only, hope for delivery of developmental services. In the spirit of their mission of educational access and opportunity, community colleges are committed to develop an educated citizenry that contributes to national prosperity and equity. To achieve this promise, community colleges must be unequivocally sanctioned to respond to the needs of *all* students.

Community Colleges Must Reemphasize Their Commitment to the Underprepared

The importance of community college remedial programs is undeniable. American community colleges, however, must reaffirm their commitment and bring a new level of energy to the task of improving these programs. They must evaluate their instructional systems and redouble their efforts to ensure the delivery of verifiable outcomes that will be required both in the academy and the workplace of the future.

Programs and services must be expanded to respond to the growing numbers of underprepared students. They should join with local school systems, business and industry, and state governments in a unified effort to this end. Students must be guaranteed continued access to financial aid for remediation and should not be held to a standard of academic achievement greater than that of other students.

As detailed in Chapter Three, extensive research has documented the components of excellent developmental programs at a number of community colleges. Ten such model programs are detailed in Part Two of this document. Performance data that are comparable across colleges are scarce, however, and generalizations are necessarily restricted. This monograph defines the critical importance of developmental education to the future of America. Nevertheless, further study is needed of a significant national sample of community colleges with comparable data and carefully drawn research questions to help inform institutional leaders and policy makers about developmental education issues. The following are examples of issues to be addressed by such a study:

- What are the differences in performance, retention, and continued progress among students who begin with one, two, and three areas of basic skill deficiencies (reading, writing, and mathematics)?
- What are the differences in performance, retention, and continued progress between older, returning adults and recent high school graduates who enroll in developmental education programs?
- What are the life and occupational benefits for students who complete developmental courses and then drop out of college? What happens to program drop outs?
- What are the questions concerning developmental education that legislators and other policy makers and funding agents want answered?

Summary

Of all educational institutions, community colleges have the greatest ability to move significant numbers of Americans from dependent to self-sufficient status. While leaders fervently hope for the day when most high school graduates are adequately prepared to continue with postsecondary education or work, nothing suggests that this goal will be achieved in the foreseeable future. For now, the question of whether community colleges should continue to provide developmental education in the twenty-first century is answered with a resounding YES! All of the critical questions that frame the developmental education debate have been answered in the affirmative.

- Will it be needed? YES!
  Every social and demographic factor–immigration, poverty, status of children, growth of minority populations–indicates that there will be far more underprepared adults, while American business and industry must have a highly skilled work force. A decrease in the percentage of Americans in their prime work years signals a potential shortage of workers and affirms the requirement that every American is needed in the work force. In addition, the burden of a growing underclass threatens the very well-being of the country. Developmental education is the means to bring all Americans into productive participation in society.
- Are costs reasonable? YES!
  Remedial education is the greatest bargain in American education. Less than the equivalent of the cost of one-fourth of one year of education is spent on each remedial student developing a more productive life. Less than eight percent of community college federal financial aid is spent on remediation.
- Is it effective? YES!
  Studies show that about half of all developmental studies students successfully complete their remedial programs. They then perform on a comparable level to those who entered without academic deficiencies. In fact, they demonstrate higher average retention rates than other students. Nearly one in three community college graduates begins their college education in developmental studies.

The greatest strength of our nation is the belief in the value of every human being and the commitment to help each person reach full potential. This investment produced a breadth of talent that made America the strongest nation in the world. It would be unthinkable and

Less than the equivalent of the cost of one-fourth of one year of education is spent on each remedial student developing a more productive life. Less than eight percent of community college federal financial aid is spent on remediation.

devastating to write-off huge numbers of Americans who, at any point in their lives, do not have the necessary skills for self-sufficiency or education to fulfill their personal goals. Perhaps more than any other institution, community colleges embody the nation's commitment to the belief that a democracy thrives to the degree that its people are educated (Vaughan, 1995). Community colleges provide the opportunity for all individuals to pursue higher education, and in doing so, have learned that individuals who lack important competencies do not necessarily lack ability. More important, community colleges have learned how to help individuals succeed in fully developing their talents, skills, and abilities.

It takes as little as $1,000 of public expenditures to remediate the average underprepared student at a community college. Is there anyone who does not see the wisdom of spending so little to launch an individual toward a more productive and fulfilled life?

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SECTION TWO

EXEMPLARY DEVELOPMENTAL EDUCATION PROGRAMS

Chapter 5

Developmental Education Services at Bucks County Community College

Mary Ann Klicka

Institutional Profile

Bucks County Community College (BCCC), is located in Newtown, a small town near Philadelphia. It is one of fifteen community colleges in Pennsylvania. In 1996, the population of Bucks County was estimated to be 578,715. According to the 1990 census, 95 percent of the county population is white, 2.8 percent is black, and 2.2 percent is represented by other minority groups. The 1989 median family income was $48,851, making it one of the more affluent counties in the state. More than a third of residents 25-years-old and older have a bachelor's or graduate degree. Fewer than 18 percent have not graduated from high school. State records indicate that approximately 75 percent of the 1994-1995 high school graduates pursued postsecondary education.

Bucks County Community College enrollment reflects the county demographics, with 94.1 percent of the fall 1997 student body (8,978 students) white, 2.0 percent black, and the remaining 3.9 percent composed of other minority groups. The median age of the student body is 24, but more than 36 percent of the students are over 30 years of age. Like many community colleges, the percentage of part-time students is high–currently 68.7 percent. More than 95 percent of the students who attend BCCC live within the county.

Bucks County Community College offers 68 transfer, occupational, and certificate programs. In the fall 1997, almost 72 percent of all students were in transfer programs, and fewer than 30 percent were pursuing occupational and certificate degrees.

The Developmental Education Program

The comprehensive and well-established developmental education program at Bucks County Community College exemplifies the best of current practice in the field. It contains the major program components that have been identified with student success. According to the review of the literature conducted by Boylan, Bliss, and Bonham (1997), these components are: presence of centralized program organizational structure;

- presence of mandatory assessment of students;
- presence of mandatory placement of students;
- availability of tutorial services;
- availability of tutor training;
- availability of advising and counseling services; and
- presence of program evaluation.

In addition to these components, BCCC's Developmental Education Services (DES) program includes integration of reading, writing, mathematics, and study skills in all developmental education courses; mentoring of part-time faculty; alternative instruction methods, faculty and staff consultation services; and outreach to county high schools, civic organizations, and businesses.

In his keynote address at the 1997 Pennsylvania Association of Developmental Educators' Spring Conference, Hunter Boylan, director of the National Center for Developmental Education, made suggestions that are already realities at BCCC. First, to strengthen the program it is evaluated regularly and systematically. Second, program evaluation information is communicated to national, state, and local representatives and decision makers. Third, the program design is based on educational theory, and its practice is guided by research. Fourth, standardized measures are used to evaluate student achievement in developmental courses. Finally, DES faculty are not only masters in their field, but are also involved professionally in a variety of collegewide activities. For example, DES faculty have been instrumental in initiating

the college's Assessment Testing Program, the Advising Specialists Program, Student Success Week, and the Writing Across the Curriculum Program. Their influence is felt throughout the institution.

The goal of Developmental Education Services at BCCC is to be consistent with the college philosophy and help fulfill its mission, which states:

> The College touches the lives of many county residents through activities on the main campus and off-campus sites. Our open door policy encourages all who wish to obtain an education to do so...Bucks County Community College offers [among other opportunities] courses designed to improve basic skills for students who are not prepared to do college-level work.

In keeping with this mission, the Developmental Education Services program:

- ensures that county residents are provided with an opportunity to begin their studies at an appropriate level;
- ensures that county residents whose native language is not English are provided with support for their rapid integration into English-based college studies;
- ensures that county residents with academic inadequacies in reading, mathematics and writing are provided with instruction to better ensure their success in college-level courses;
- ensures that county residents, many of whom are from families in which a college education is a new experience, are provided with skills in academic, career and personal decision making; and
- ensures that students are provided with sustained support to overcome short-term, specific academic deficiencies throughout their educational experience.

Organizational Structure

The DES program, which began in 1972, was based on an educational philosophy that recognized both the cognitive and affective needs of students(the need for remediation of basic skills and the need for support in the psycho-social aspects of learning, such as the development of intrinsic motivation, efficient study skills, and positive self-image. To put this philosophy into practice, the college limited class sizes and hired faculty with professional expertise in both an academic discipline and counseling. Services were delivered through a centralized organizational structure known as the Basic Studies Department. As a result of collegewide reorganization in 1994, a new unit, Developmental Education Services (DES), was formed.

Developmental Education Services is a unit reporting to the associate dean of Library and Instructional Resources. This dean reports to the vice president and dean of Academic Affairs. DES is staffed by three full-time faculty, one of whom serves as the director, one secretary, and twenty-two to forty part-time faculty. Five other qualified full-time faculty members provide instruction in developmental education, and are currently assigned to other units. Over the past twenty-five years, approximately 100,000 students have been served through the developmental education courses, workshops, tutoring, and counseling. At the present time, DES offers nine credit and twenty-two noncredit courses. In fall 1997, 1,323 students were enrolled in credit courses with an average class size of 16. Whether or not these credit courses are included as electives toward graduation depends on the student's program of study. All courses are included in the calculation of the student's GPA, and, therefore, motivate student performance.

The centralization of developmental education services ensures continuation of the program's educational philosophy and promotes its visibility on campus. It guarantees the budget allocation and administrative representation required by a program that is central to the college's mission and vital to student success. DES provides for interaction of students, faculty, staff, and county residents. It also facilitates cross-curricular cooperation. The focus of the program is on total student growth and success, not simply on the academic discipline. The early alert initiative, in-service workshops, and a study skills component in all courses are examples of this interdisciplinary focus.

DES has implemented an early alert initiative in all developmental courses. Within the first few weeks of the semester, all full-time and part-time faculty identify students who demonstrate "at-risk" behaviors. They conference individually with these students during office hours and

The focus of the program is on total student growth and success, not simply on the academic discipline. The early alert initiative, in-service workshops, and a study skills component in all courses are examples of this interdisciplinary focus.

develop a plan with the student that may include referrals to other college services, such as the Office for Students with Disabilities, the Career Center, and the Tutoring Center. The plan is submitted to the director of Developmental Education Services, who follows up as needed. With teacher recommendation, students experiencing difficulty in mathematics classes may request placement in an individualized / mastery learning class.

Some of the faculty who teach developmental education courses also teach college-level courses in other departments. This sharing of faculty allows for a better faculty awareness of subsequent course material. Resources are provided so that both full- and part-time faculty can participate in ongoing campus professional development programs to meet their special needs. As well, they may attend off-campus professional meetings, seminars, workshops, and courses to interact with colleagues from other institutions. The department's mentoring program provides insights, suggestions, and encouragement to adjunct faculty and facilitates their professional growth. DES in-service training covers topics of general interest to developmental educators, such as: Motivating Students to Learn, Factors Contributing to Student Success, Teaching Students with Attention Deficit Disorder in the College Classroom, Using Computer-Assisted Tutorials Supplemental to Classroom Instruction, Using the Advisors Program on the College's Mainframe, and Using E-mail and Voicemail. All of these workshops are open to faculty across the campus. In addition, area meetings provide training specific to the discipline.

Advising/Counseling Services

Since BCCC is an open-enrollment institution, students may enroll in any course for which they have the necessary prerequisites. Since not all courses have a reading, writing, or mathematics prerequisite, students enrolled in developmental education courses may be concurrently enrolled in college-level courses. In this way, they are part of the college mainstream. Academic advisors, developmental educators, and college counselors collaborate to deliver an individualized advising program in which students are "scheduled" for success.

Developmental education faculty work cooperatively with advisors across the disciplines to ensure that their students select courses and plan schedules wisely. For example, developmental educators share research findings with the college's advising specialists, and academic departments provide developmental educators with lists of courses that are appropriate for developmental reading students. DES faculty advise incoming freshmen who place in developmental courses at new student orientation. In subsequent semesters, they are assigned to academic advisors based on their program of study.

Since faculty who teach developmental education courses have counseling backgrounds, their counseling expertise is available throughout the semester. Through classroom activities and individual conferences and counseling, instructors work to encourage positive student attitudes and help free students from negative thoughts and feelings about themselves and their ability to manage college challenges.

Assessment Testing and Placement

The college requires assessment testing in three basic skill areas for all full-time entering students and for part-time students registering for their 16th credit. An essay assigned by the Department of Language and Literature is required of all students who wish to enroll in the composition sequence. Students are allowed 45 minutes to complete the essay, and it is scored holistically by faculty. The mathematics placement test was developed at this institution and consists of two forms: one for those who have completed one year or less of algebra, and one for those who have had more than one year of algebra. The Asset Reading Test, a computer-scored, standardized assessment tool is used to test students' vocabulary and comprehension skills. Scores used for course placement and th percentage of students testing into each level in spring 1998 are noted in Table 5.1.

Tutoring Services and Tutor Training

Tutoring is available to students in all developmental education courses. At the

Table 5.1: Percentage of Students Testing into Developmental Courses in Spring 1998

READING	WRITING	MATHEMATICS
Level 1 - READ 090* (17%) Developmental Reading / Reading for International Students	**Level 1 - ESLN 101* (1%)** Intermediate American English as a Second Language	**Level 1 - MATH 090* (17%)** Fundamentals of Mathematics
Level 2 - READ 110 (30%) College Reading & Study Skills	**Level 2 - WRIT 101* (15%)** Basic Writing	**Level 3 - MATH 095*(50%)** Basic Algebra
Level 3 - READ 115 (52%) College Study Seminar (suggested, not required)	**Level 4 - COMP 107 (62%)** Introduction to Rhetorical Skills	**Level 5 - (22%)** Intermediate Algebra or Math for Technology I or Business Math
	Level 6 - (22%) English Composition I or Business Letter and Report Writing	**Level 7 - (8%)** Elementary Statistics or Quantitative Methods I or College Algebra or Trigonometry & Analytic Geometry
**Developmental Education Services courses*		**Level 9 - (3%)** Pre-Calculus or Trigonometry & Analytic Geometry or Calculus I

beginning of each semester, students, accompanied by their instructors, attend a required Tutoring Center orientation. The Center is open from 7:30 a.m. to 7:00 p.m., Monday through Thursday and from 7:30 a.m. to 3:30 p.m. on Fridays. It is staffed by a director, math supervisor, writing supervisor, and three salaried instructional assistants, plus paid and volunteer tutors. DES students receive, on the average, 28 percent of the tutoring hours at the Tutoring Center. Tutors are trained, and a Level I College Reading and Learning Associations certification is under development.

Program Evaluation

Bucks County Community College's Institutional Research Department annually assesses institutional effectiveness. A major DES outcome goal targeted for assessment each year is for students who successfully complete a developmental course to perform well in entry-level college courses, and for their performance to compare favorably with students who did not take a required developmental course (nondevelopmental students). Research has consistently demonstrated that developmental education students do as well as, if not better, than nondevelopmental stude[illegible] in college-level courses. Table 5.2 displays [illegible]mparative data from 1996 and 1997.

Developmental Educat[illegible] Services systematically researches, evaluates, and makes adjustments to improve program quality. Over the past twenty-five years, formative and summative evaluations have been conducted using both quantitative and qualitative methods. Downsizing of the department has presented a challenge in collecting and analyzing data, since the staff are overextended serving students. Therefore, evaluations requiring manual searches are conducted periodically and focus on only one or two program components, such as a comparison of the individualized computer-

Research has consistently demonstrated that developmental education students do as well as, if not better, than nondevelopmental students in college-level courses.

assisted mastery learning class sections with other class sections in Foundations of Mathematics. In addition, the department conducted a self-evaluation using the section on "Developmental Coursework Programs" from the National Association of Developmental Education's *Self-Evaluation Guides* (Clark-Thayer, 1995) to help identify areas needing strengthening.

Faculty who teach developmental courses conduct collaborative formative evaluations during area meetings, where they discuss their findings and plan adjustments to improve their courses. For example, recent formative evaluations have led writing faculty to make changes in the computer modules required in their course, reading faculty to choose higher interest and more appropriate reading materials, and math faculty to produce a computerized word-problem data bank as a curriculum supplement.

The director of Developmental Education Services conducts quantitative summative evaluations each year and shares the results with faculty, administrators, and public policymakers. These quantitative evaluations include measurements of developmental education student success in courses (as measured by a standardized instrument and final grade in course), retention and success in follow-up courses, and the A.A. degree graduation rates of students who have taken at least one developmental education course. As Table 5.3 indicates, substantial numbers of graduates have completed at least one developmental education course.

In addition to tracking student success in developmental courses and subsequent courses, empirical research has been conducted to

Table 5.2: Developmental and Nondevelopmental Education Students' Success in College-Level Courses

	Group*	Total Students		Students Successfully Completing Subsequent Course		Subsequent Course GPA	
		1996	1997	1996	1997	1996	1997
Writing	1	581	528	403 (69%)	419 (79%)	2.21	2.29
	2	332	309	249 (75%)	240 (78%)	2.36	2.43
Reading	1	N/A	14	N/A	9 (64%)	N/A	2.36
	2**	N/A	86	N/A	46 (54%)	N/A	1.88
Math	1	86	211	52 (60%)	129 (61%)	2.11	2.20
	2	202	334	115 (57%)	194 (58%)	2.15	2.07

**Group 1 = students taking a developmental course before taking college-level course*
**Group 2 = students placed directly into the college-level course.*
***Subsequent course is Accounting 100, which has a required college reading level.*

Table 5.3: Graduation Rates of Developmental Education Students

Year	Total A.A. Degree Graduates	A.A. Graduates Completing Developmental Education Course(s)	% of A.A. Graduates Completing Developmental Education Course(s)
1993-1994	803	465	58%
1994-1995	668	337	50%
1995-1996	613	348	57%
1996-1997	494	317	64%

determine the effectiveness of new teaching methodologies, such as computer-assisted instruction supplemental to classroom instruction (Klicka, et al., 1993; Ford and Klicka, 1994). As a result of findings from these studies, DES incorporated computer-assisted instruction into the requirements for Basic Writing, Developmental Reading, Fundamentals of Mathematics, and Basic Algebra. Research on the effectiveness of courses in American English as a Second Language also was conducted in collaboration with an advising specialist.

Developmental Education Costs

The cost of providing developmental education at BCCC remains low, despite increased services and student success rates. Cost per credit hour of remedial education delivered ranged from an average of $109 in fiscal year 1995-96, to $122 in 1996-97, to $107 in 1997-98. Table 5.4 outlines the departmental expenditures and costs per credit hour of remedial instruction. The calculation of the mean credit hour of instruction for developmental and remedial courses is based on a percentage of annualized equivalent full-time student (EFTS), which represents 360 hours of instruction. The mean number of hours of developmental courses taken by BCCC students are identified for the three most recent fiscal years. The data reveal that for fiscal year 1997-98, the mean credits of developmental instruction represented 13.9 percent of an EFTS.

Summary

Developmental Education Services at Bucks County Community College is dynamic, continually changing and improving as new student needs, new teaching methods, and new research findings emerge. Through the efforts of extremely dedicated faculty–all full-time DES faculty have received national or state recognition for excellence–and their attention to high standards and achievement, the Developmental Education Services program continues to meet new challenges and play an integral role in fulfilling the mission of Bucks County Community College.

Table 5.4: Developmental Education Services (DES) Expenses and Cost Per Credit Hour of Developmental Instruction

Fiscal Year	DES Headcount	Total Remedial Credits	Mean Credit Hours of Developmental Instruction per Student	DES Fiscal Year Expenditures	Cost Per Credit Hour of Developmental Instruction
1995-1996	1,698	5,664	3.34	$617,784	$109
1996-1997	1,665	5,172	3.11	$631,949	$122
1997-1998	1,674	5,520	3.30	$592,217	$107

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Chapter 6

Community College of Denver Developmental Education

Byron N. McClenney and Ruben Michael Flores

Institutional Profile

The Community College of Denver (CCD) is an open-admission, two-year urban college. Created in 1967 by the Colorado legislature, CCD is one of 13 two-year colleges in the Colorado Community College and Occupational Education System (CCCOES). The institution provides instructional programs and services to more than 10,000 students seeking training, vocational certificates, and associate degrees. Among Denver's 500,000 area residents, CCD is the leading point of entry into higher education.

CCD provides instructional programs and services at 14 locations within the city and county of Denver. The Community College of Denver is the only community college in the nation to share a campus with a four-year college (Metropolitan State College of Denver) and a university (University of Colorado at Denver). Located on the Auraria Higher Education Center Campus, the three institutions share classroom buildings, a regional library, recreation facilities, a student union, and other amenities. CCD also operates three Technical Education Centers (TEC) situated in some of Denver's most economically disadvantaged areas. Nestled in residential areas, TEC East, TEC West, and TEC North provide opportunities for individuals to achieve vocational and technical certificates, as well as begin course work toward associate degrees that can be completed on CCD's Auraria Campus. In addition, CCD's GED Institute serves residents at ten sites throughout the county.

Over the last 30 years, Community College of Denver has received numerous awards for its quality programs and service to the community. Recently, Terry O'Banion, president and CEO of the League for Innovation in the Community College, recognized CCD as one of the top six community colleges in the nation leading the learning revolution. O'Banion's best-selling book, *A Learning College for the 21st Century* (1997), profiles the progress CCD has made toward becoming a learning-centered college. John Roueche, distinguished scholar from The University of Texas at Austin, and another of the country's leading researchers on two-year institutions, features a decade of CCD's productivity and institutional effectiveness activities as one of seven case studies highlighted in his award-winning *Embracing the Tiger: The Effectiveness Debate and the Community College* (Roueche, Johnson, and Roueche, 1997). In terms of its developmental education program, CCD was a model site during the National Association of Developmental Education's 1997 Annual Conference in Denver.

CCD, the third largest of the 13 state community colleges, is the only institution of higher education in Colorado that does not have an ethnic or racial majority. Indeed, CCD is Colorado's most diverse higher education institution, with a student enrollment that is 53 percent minority, 61 percent women, and 9 percent persons with disabilities. The student population embodies a higher proportion of women and minorities than exists in the local population. Table 6.1 compares the demographic profile of CCD with that of the city and public schools, and documents the diverse ethnic and racial constitution of the college.

CCD is committed to serving this diverse community and helping individuals achieve their goals. Between 1987 and 1996, the total number of graduates increased by 95 percent. During the same period, graduates of color increased from 13 percent to 46.5 percent, a 422 percent increase.

Although the average age of CCD students is 28 years, recent statistics indicate that 46.8 percent of its students are age 24 or younger. Indeed, demographic trends suggest that future college enrollment will be driven by growth in 18- to 24-year-old residents (Colorado Commission on Higher Education, 1996). Current CCD student enrollment consists of greater than 60 percent first-generation college students, a group that has constituted the majority of students enrolled since the school's inception.

Table 6.1: Demographic Profile of City of Denver, Denver Public Schools, and Community College of Denver

Ethnicity/Race	Denver	Denver Public Schools	CCD
African American	12.8%	21.4%	13.0%
Asian/Pacific Islander	2.4%	3.5%	8.0%
Hispanic/Latino	23.0%	48.4%	30.0%
Native American	1.2%	1.4%	2.0%
White	60.6%	25.3%	47.0%

Source: 1990 U.S. Census; CCD Annual Report

Service Area Profile

Data regarding educational attainment and economic status of Denver citizens are quite revealing. The 1990 Census reveals that the area's minority population increased from 33 to 39 percent since 1980. Although whites constitute 60.6 percent of the city's population, 74.7 percent of Denver public school students are minority. Hispanics are the largest ethnic group in the school system, comprising 48 percent of the 66,000 students. The national Hispanic Dropout Project recently reported that only 49 percent of Hispanic students in the Denver Public Schools graduated in four years (Weber, 1998). As the leading point of access to higher education for first-time college students, CCD is faced with an increasing number of underprepared students entering its doors. Table 6.2 displays the Denver Public School dropout rates by ethnic group.

Table 6.2: Denver Public Schools Dropout Rates by Ethnic Group*

Ethnicity/Race	Percentage
African American	26.9%
Asian/Pacific Islander	25.8%
Hispanic/Latino	49.9%
Native-American	48.9%
White	22.7%
Overall Dropout Rate	**35.5%**

** A dropout is defined as a person who leaves school for any reason before completion of a high school diploma or its equivalent and who does not transfer to another school or enroll in an approved home-study program. (Source: Colorado Department of Education)*

Despite these unacceptably high dropout rates, educational attainment data for all of Denver's residents is promising, as Table 6.3 indicates. These positive findings, however, can be attributed to the dual educational and economic system developing in the area and the migration of college-educated adults to Colorado.

CCD serves an economically challenged population. According to the 1990 Census, 17 percent of Denver residents (79,000) lived in poverty. The median household income of Denver residents was $25,106, compared to $30,140 for Colorado residents, and $30,056 for United States residents. College data indicate that CCD students have even lower incomes than area residents, with an average family income of $13,406, a figure substantially lower than their counterparts at other institutions on the Auraria Campus, as noted in Table 6.4. In fact, the average family income of CCD students is the lowest among college students in the state with the exception of Trinidad State Junior College in southern Colorado.

In 1989, the Colorado legislature, concerned about high levels of illiteracy and innumeracy of the state's high school graduates, mandated that community colleges provide all developmental student support. Since then, state policymakers

Table 6.3: U.S., Colorado, and Denver Educational Attainment Rates*

Level of Education	United States	Colorado	Denver
Bachelor's degree or higher	20.3%	27.0%	29.0%
Some college or higher	45.2%	57.9%	55.6%
High school graduate or higher	75.2%	84.4%	79.2%
Less than 5th grade	2.7%	1.2%	2.2%

* *Persons age 25 and older (Source: 1990 U.S. Census)*

have turned greater attention to secondary educational reform, taking the position that if secondary education were improved, college-level developmental education would no longer be needed. A recent national study of community college students, however, revealed that the majority of students enrolled in developmental courses either never graduated from high school or were adults returning to college after a long absence from formal education (National Association of Developmental Education, 1997). This finding is significant for the Community College of Denver since CCD currently provides one-third of all remedial instruction in Colorado public higher education. Enrollment in developmental courses accounts for 34 percent of CCD total credit hours (Colorado Commission on Higher Education, 1996).

State board policy mandates that all entering students be assessed for certain basic skill by either a standardized instrument, a locally developed instrument, or an interview. Each student who enters CCD is given an assessment test before or during registration. The College Board's Computerized Placement Tests are used to assess basic academic skills, including mathematics, writing, reading, and fundamental study skills. Skilled counselors and faculty use assessment information to advise and place students in appropriate courses. Placement in developmental courses is not mandatory, but studies have shown that students who follow test-related advice are much more likely to succeed than those who do not. Students who choose not to enroll in developmental classes recommended by an advisor must sign waivers stating they are aware that they could be jeopardizing their chances of success by taking classes for which they do not have prerequisite skills.

Community College of Denver Developmental Education Formula

Experience has shown that to be successful at CCD, students must be able to use their mathematics, writing, reading and fundamental study skills. Thus, the college strives to help students improve their basic skills at the point of entry. Students whose assessment scores fall below program entry level in any component of the Computerized Placement Tests are strongly encouraged to enroll in developmental courses

Table 6.4: Average Household Income Among Colorado College Students Applying for Financial Aid (1993-94) *

Statewide Average	Auraria Campus		
	University of Colorado at Denver	Metropolitan State College of Denver	Community College of Denver
$24,778	$21,608	$20,952	$13,406

* *Related or unrelated individuals in a household (Source: Colorado Commission on Higher Education)*

until they reach college-level competency. While building their basic skills in one or two areas, students may be eligible to enroll in certificate and degree credit classes with other skills requirements for which they are prepared. If a stipulated skill level is a prerequisite to a given course, however, students must illustrate competency on the necessary skills before enrolling in a higher-level course.

The Division of Education and Academic Services (one of six instructional divisions at CCD) houses the developmental education program. On-campus units within the division that provide developmental education services include: the Academic Support Center, General Equivalency Diploma program, Reading, precollegiate English, precollegiate Mathematics, and the Testing Center. Another division unit is the GED Institute which collaborates with community agencies to provide General Equivalency Diploma and English as a Second Language classes throughout the Denver area.

Utilizing one full-time faculty member, several part-time faculty, and one full-time staff member, the Institute served approximately 1,744 students and provided over 31,500 hours of instruction during the 1995-1996 academic year. The program's student population is 87 percent minority and 64 percent female, with 58 percent of all students receiving some form of public assistance. CCD's three Technical Education Centers also offer students developmental/basic skills training in an open-entry, open-exit, and self-paced mode. Regardless of the setting, the developmental education program is an integral part of the institutional mission.

During the 1996-1997 academic year, 3,532 students (duplicated headcount) were enrolled in developmental education classes on the CCD downtown Auraria Campus. These students were instructed by 11 full-time and 39 part-time faculty members. In conjunction with developmental course work, a student is required to spend one hour per week in the appropriate Academic Support Center lab. The distribution of students in each of the six major developmental studies programs during the 1996-97 school year is displayed in Table 6.5.

Utilizing a "high-tech, high-touch" approach, the Academic Support Center (ASC) allows students to receive instruction that focuses on their needs. The center is centrally located in CCD's main South Classroom Building and operates Monday through Saturday, seventy two hours per week. The center offers lab tutoring programs and support services in several basic skill areas: English as a Second Language, General Equivalency Diploma, Mathematics, Reading/Study Skills, and Writing. In the lab, students can receive one-on-one tutoring, work in small groups, or receive computer-assisted instruction. Faculty (full- and part-time), professional tutors, and peer tutors and mentors give special attention to all students to help them build basic skills or succeed in their content-area classes. In addition, the ASC houses

Table 6.5: Developmental Education Students by Service Area, 1996-97*

Developmental Education Area	Sections Taught	Student FTE	Students Enrolled
Developmental English	17	45	225
English as a Second Language (ESL)	57	182	874
General Equivalency Diploma (GED)	3	2	29
Developmental Math (MAT)	49	165	827
Reading (REA)	80	275	1,373
Special Learning Support Program	20	43	204
Total	**226**	**711**	**3,532**

* *Includes summer, fall and spring semesters*

Utilizing a "high-tech, high-touch" approach, the Academic Support Center (ASC) allows students to receive instruction that focuses on their needs.

three instructional support programs that target special populations: Special Learning Support, Student Support Services, and Supplemental Services. A wealth of services are offered to students at the "one-stop" Academic Support Center:

- **English as a Second Language**–Faculty, tutors, and computerized assistance help students with pronunciation, conversation, grammar, reading, and other subject areas such as math, biology, chemistry, and computer science.
- **General Equivalency Diploma**–Faculty help students prepare to pass the Colorado High School Equivalency Diploma (CHSED) battery of tests and earn a CHSED diploma.
- **Reading/Study Skills**–Faculty, tutors, and computerized assistance help students strengthen their abilities in reading, note taking, organizational skills, test taking, and other techniques designed to enhance their success in college.
- **Math**–Faculty, tutors, and computerized assistance help students gain greater experience and knowledge in mathematical principles. Students can also watch course videos and participate in specialized workshops and study groups.
- **Writing**–Faculty and tutors work with students on all types of writing at every level. The Online Writing Lab also provides interactive Web-based tutoring services to CCD students and learners in the community.
- **Special Learning Support**–Students with learning disabilities or unique learning needs can access individualized tutoring and specialized classes. Students meet with tutors on a one-on-one basis or in small groups to learn compensatory techniques for their special learning needs. Students also strengthen their skills in math, reading, study skills, and many other academic content areas.
- **Student Support Services**–Through this federally funded TRIO program first-generation, disabled, or low-income students can receive academic advising, career counseling and transfer assistance.
- **Supplemental Services**–Through this federally funded program, vocational students can receive applied basic skills instruction, English as a Second Language instruction, lab support, and tutoring (one-on-one or group).

During the fall 1997 semester, ASC labs and instructional support programs served 6,607 students. In addition to serving CCD students, the ASC offers tutorial support to Metropolitan State College and University of Colorado at Denver. These inter-institutional services made possible through a special reimbursement policy, whereby the state reimburses the ASC for services provided to students from other Auraria higher education students on an imputed FTE basis. According to this funding formula, approximately 250 hours of developmental support services equal one imputed FTE (i.e., 1.33 imputed FTE equals 1 FTE). The number of students who received support from each ASC program area in fall 1997 are listed in Table 6.6.

A recent review of a five-year period shows that students using the Academic Support Center had an 82 percent semester success rate (GPA of A, B, or C) compared to 77 percent five years ago. The 82 percent success rate is higher than that of other

Table 6.6: Students Served by Academic Support Center, Fall 1997

Academic Support Center Unit	Students Served
English as a Second Language Lab	390
General Equivalency Diploma Lab	57
Math Lab	2,200
Reading/Study Skills Lab	770
Writing Center and On-line Writing Center	2,400
Student Support Services	200
Special Learning Support	190
Supplemental Services	400
Total served	**6,607**

CCD students. Student success is assisted by the efforts of eight full-time employees, five full-time CCD faculty who work part-time in the ASC and part-time in other academic departments, and 180 part-time tutors and technical support personnel.

Tutors are integral to operation of the Academic Support Center. The ASC uses three categories of tutors: peer tutors, who must have at least an associate degree; new professionals, who must have a bachelor's degree; and professionals, who have a bachelor's degree and two years or more of tutoring experience. Each tutor works with the lab supervisor to develop an individual plan suited to his or her training abilities. Tutors also evaluate their lab and the Academic Support Center annually. In addition, each lab has a designated full-time faculty member or lead tutor to assist and support tutors.

The commitment and professionalism that permeate the Academic Support Center are a result of the participatory organizational culture. The ASC uses several standing committees to involve full- or part-time staff, whether professional or paraprofessional. Currently, the ASC has standing committees on data collection, grants, evaluation, and tutor training. The performance of ASC staff was affirmed in a spring 1995 survey when 92 percent of randomly sampled students rated the services of the Academic Support Center as "Satisfactory to Very Good."

Program Evaluation Design

By measuring student success on an annual basis, CCD has created a climate that places learning first throughout the institution. Each year, the college takes stock of the extent to which it is meeting its goals to increase student learning. Developmental education courses and support services are, thus, evaluated to ensure that students attain necessary skills and are prepared for advanced study. Evaluation of the developmental education program is conducted by staff within each unit in the Division of Education and Academic Services. When necessary, the Office of Information Resources and Planning assists the division in assessing program performance. Performance data are used for program assessment and planning purposes for internal (college staff) and external (state and federal agencies) constituents. This information is also made public to faculty, students, and community leaders.

Program Performance

CCD serves the most difficult to serve students in Colorado higher education. The majority of students accessing developmental education courses and programs CCD are people of color, people who are disproportionately represented among the educationally disadvantaged in the area. The institution is firmly committed to the success of students of all races, classes, and cultures, and student outcome data demonstrate this commitment. Degree-seeking students who start with remedial courses, for example, are as likely to complete their first semester successfully, and even more likely to continue their studies and graduate and/or transfer, as other degree-seeking students (see Table 6.7). People of color are also just as likely as whites to continue their studies, graduate and/or transfer (see Table 6.8).

CCD's commitment to student success is reinforced by the fact that all courses are competency based and reflected in several additional outcomes:

- 84.5 percent of students in the Division of Education and Academic Services received an overall GPA of 2.00 or higher during the 1995-1996 academic year.
- Faculty in the Division of Education and Academic Services earned a rating of 4.27 (on a 5.00 scale) on their student evaluations, compared to the college

Table 6.7: First-Time, Degree-Seeking Student Success Rates for Remedial and Nonremedial Students

Student Classification	First Semester Completion	Fall to Spring Retention	Fall to Fall Retention
Remedical	84%	79%	53%
Non-Remedial	83%	69%	42%

average of 4.20 during the 1995-1996 academic year.

- 88 percent of students in reading classes received a grade of "C" or higher during the 1995-1996 academic year.
- 92 percent of students who used the Reading Lab three hours or more per week received an overall GPA of 2.00 or higher during the spring 1996 semester.
- 97 percent of students who used the Writing Lab three hours or more per week received an overall GPA of 2.00 or higher during the spring 1996 semester.
- 81 percent of English as a Second Language students received a grade of "C" or higher during the fall 1995 semester.
- 91 percent of Special Learning Support Program students received an overall GPA of 2.00 or higher during the 1995-1996 academic year.
- 93 percent of Student Support Services students received an overall GPA of 2.00 or higher during the 1995-1996 academic year.
- 82 percent of Supplemental Services students received an overall GPA of 2.00 or higher during summer and fall 1996.

Summary

Operating with approximately 17 percent of the instructional budget of the institution, the Education and Academic Services Division is one of the most productive of the instructional units. Federal grants augment the operating budget allocation, but when all funds are considered, the division is still among the most efficient and effective college operations.

Developmental education is clearly an integral part of the CCD mission. Among the critical elements leading to success of the college's developmental studies programs are cultural sensitivity and computer technology. The institution is also serious about entry-level assessment and the attainment of exit competencies. Finally, faculty, tutors, and mentors all reinforce high performance expectations. Sufficient resources have been allocated to support excellent performance. An example can be found in the Writing Center, which, five years ago, had only 15 tutors and no computers. Now the Writing Center has 40 tutors and 40 computers, illustrating the "high-tech high-touch" approach.

Degree-seeking students who start with remedial courses, for example, are as likely to complete their first semester successfully, and even more likely to continue their studies and graduate and/or transfer, as other degree-seeking students.

CCD is firmly committed to the success of students of all races, classes, cultures, and skill levels. Utilizing a "high-tech high-touch" approach, the developmental studies faculty, staff, and tutors allow students to learn in ways that focus on their needs. The success of this approach is reflected in the outcomes described in this chapter; however, constant review and support is required. Only vigilance and a continued institutional commitment to developmental education will ensure that students who come to CCD underprepared for college-level work are able to succeed at rates at least as high as those who came fully prepared, and that people of color graduate and/or transfer to four-year colleges at rates comparable to those of whites.

Table 6.8: Fall-to-Fall Retention Rates by Ethnicity and Student Classification

Student Classification	Remedial	Non-Remedial
People of color	55%	42%
White	49%	43%

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Chapter 7

DELGADO COMMUNITY COLLEGE

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Institutional Profile

Delgado Community College (DCC) has been a part of life in New Orleans, Louisiana, for m re than 75 years. The college is named for Isaac Delgado, a successful local businessman whose estate established a trade school for boys. When it opened in 1921, the school was hailed as the finest and most complete school of its kind in the country. Although it has changed considerably since those early days, the college has always focused on providing high-quality career education at an affordable cost. Today, DCC is a state-supported community college enrolling approximately 14,000 students at two campuses, a learning center, a nursing school, and several outreach sites in the greater New Orleans area.

The New Orleans metropolitan area has a population of approximately 1,238,000, according to the latest U.S. census data. At least 20 percent of the adult population (over 18) are not high school graduates, and of these, 8 percent have less than a ninth grade education. Only 16 percent have an associate's degree or higher. At the time of the last census, per capita income was $12,108.

A recent institutional survey finds that 88 percent of Delgado's students come from the metropolitan region. Among DCC students, 49.2 percent are white, 35.9 percent are African American, 6.3 percent are Hispanic, 3.5 percent are of Asian or Pacific Islander heritage, and 1.2 percent are Native American (the remainder did not indicate race). Sixty-five percent of the students are female. The average age is 28.

Delgado offers more than 70 associate degree and certificate programs in a broad range of disciplines, including arts and humanities, business and occupational studies, allied health and nursing, science and technology, and the social sciences. DCC serves the lifelong needs of adult learners by providing an affordable, accessible education. Programs are designed to prepare students for immediate employment, to give them college credits that may be transferred to four-year institutions, to strengthen their academic foundations, and to expand their academic and cultural opportunities. Most programs are offered on an open-admissions basis. Tuition is low, and more than 60 percent of students receive scholarships, loans, grants, or work-study support.

Developmental Education at Delgado Community College

The primary goal of DCC's developmental education program is to assist students enrolled in developmental courses acquire skills necessary to succeed in college-level courses. A secondary goal, but one of considerable importance, is to create an attitude toward learning that will create persistence and lead to success in college and the work world.

It is vital to the New Orleans metro area that students are prepared to compete and succeed both in their college courses and the workplace. The community DCC serves is primarily urban, with a large segment of the population deficient in language and math skills. DCC plays a significant role in developing the New Orleans-area work force. Most of its degree and certificate programs are vocational in nature, and curricula are frequently updated to reflect the changing needs of local business and industry. The college offers courses at workplace locations and provides custom training. Students receive on-the-job training through internship programs. Business and community leaders serve on advisory panels to ensure that students are being taught the skills they will need in the workplace.

As an open-admissions institution, remedial or developmental education plays an important role in preparing students to succeed in college-level education. In the 1995-96 academic year 74.9 percent of entering freshman required remediation in at least one subject. At DCC, a

distinction has been made between students needing only one remedial developmental course and those requiring extensive development of basic skills. If students need developmental assistance in two or more areas, they are classified as "Basic Education," or developmental students. These students are degree seeking, declare a major, and begin enrolling in courses in the subject area; however, they receive special counseling and advisement services until they reach college-level abilities. For academic year 1995-96, 49.12 percent of all first-time freshman were classified as developmental students.

All certificate or degree-seeking students–first-time freshman, transfers, and readmitted students–are enrolled in developmental courses based on ACT scores and/or placement test scores in math, English, and reading. Placement tests are closely coordinated with counselors and advisors and are scored by faculty in the Communications (English and reading) and Math and Science divisions. Students' classes are scheduled by faculty advisors from each division, ensuring proper placement in English, reading, and math. Students requiring English as a Second Language (ESL) courses are advised and scheduled through the English as a Second Language department, which is the oldest and largest ESL department in the greater New Orleans area. Presently, this department serves between 350 and 400 students per semester offering 25 courses at varied levels of proficiency.

Developmental courses at DCC have been structured to fit into the college's educational program, which emphasizes that a DCC graduate will demonstrate proficiency in four key academic areas:

- **The English Language,** including the ability to describe, report, order, and analyze facts and opinions; to distinguish between facts and opinions; to synthesize facts and opinions; to think critically; and to compose and express a series of related thoughts unified in content and coherent in language.
- **Computational Methods,** including the ability to manipulate mathematical language above the basic computational level; to organize information and to recognize patterns among different phenomena; and to understand the importance of logic and self-discipline in solving problems.
- **The Physical World,** including the ability to understand at least one branch of the natural sciences; to follow the sequential steps necessary to analyze and solve a problem; and to recognize when the absence of data impedes the formation of a sound conclusion.
- **The Social and Individual Behavior of Human Beings,** including the ability to analyze a social issue; to formulate analytical questions about behavior; to recognize that insufficient data can impede judgment; to locate sources for data; and to understand at least one of the basic disciplines in the social sciences and how its principles and theories are applied to an understanding of human behavior.

In addition to basic education/developmental courses in math, English, and reading–which students *must* complete before proceeding to college-level courses–remedial courses are offered in other disciplines such as biology, Spanish, speech, and business.

DCC provides myriad services to help students complete their requirements. A full range of counseling services–including academic, special needs, and career counseling– is available to students in developmental courses. Students enrolled in developmental courses are required to take a specially designed college-level study skills course that includes behavioral and attitudinal components necessary for college success.

The first level of developmental math includes small classes (18 students maximum) combined with computer lab instruction. Other levels of math are taught in traditional classrooms, but instructors include innovative teaching methods, such as collaborative learning and use of multimedia aids. Instruction in English and reading is offered in both traditional and computer classrooms. ESL students have access to a variety of learning services and are held in standard classrooms, as well as in three computer classrooms. In math, alternative computer classrooms are available for students who have difficulty attending at regular class times.

All developmental students at DCC's main campus have access to labs in each discipline that provide tutoring and computer services. All of the lab services are closely coordinated with instruction in each discipline. English labs serve developmental English and ESL students and

offer one-to-one tutoring in grammar, writing, and computer services. ESL students also have access to a multimedia ESL Speaking and Listening Lab. The Reading Lab offers supplemental work with computer-based reading software. Reading students may also request individua ed tutoring and borrow freely from the lab's extensive paperback library. The math lab offers a full range of services for developmental students, including tutoring, computers, and video tapes. Additionally, developmental students have access to open computer labs and computer-equipped learning centers on the other campuses that include tutoring services in all the disciplines.

At DCC, many full-time faculty who teach college-level courses also teach developmental courses, guaranteeing close coordination of educational goals. Currently, 23 full-time faculty and 28 adjunct faculty teach developmental math. Developmental English courses are taught by 15 full-time and 14 adjunct faculty. Reading courses are taught by 7 full-time and 14 adjunct faculty. ESL classes are taught by 10 full-time and 8 to 10 qualified adjunct faculty. Faculty in all areas are supported through the various labs and their staff–including lab assistants, computer technicians, paraprofessionals, student tutors, and community volunteers. Not all areas have the same needs, so each discipline uses the support services that best fit its students' needs.

Because of the culturally diverse population served there are no "typical" students at DCC, however, many of the students enrolled in developmental courses fit an "at-risk" student profile. According to a recent study by the college's Office of Institutional Research, the only demographic indicator that shows a statistically significant difference between developmental and nondevelopmental students is age, with developmental students more likely to be younger. The study also found African Americans to be over-represented among developmental students, constituting 44.9 percent of the developmental studies population. Students enrolled in developmental courses also are twice as likely to come from "low-income" families as nondevelopmental students. A number come from a local school system with standardized test scores that consistently rank near the bottom in national studies. At least 65 percent of the developmental students in the study attended a public high school, and 14.6 percent obtained a GED. Sixty-three percent of the students are female, and 57 percent are enrolled part time.

The only demographic indicator that shows a statistically significant difference between developmental and nondevelopmental students is age, with developmental students more likely to be younger.

Students enrolled in ESL classes are 45 percent Hispanic (mainly from Central America), 40 percent Asian (two-thirds from Vietnam), and the remaining 15 percent are from the Middle East, Europe, and Africa. Approximately 70 percent of the ESL students are residents of the United States, while the remaining 30 percent have student visas.

At DCC, students' educational deficiencies must be corrected before they can enter college-level courses in each discipline. This standard is maintained through a system of exit/proficiency exams based on the same skills measured in placement exams. In math, all deficiencies must be corrected to a 70 percent or greater mastery. English students must take a holistically scored exit exam that correlates with the college placement test. English exams are scored by two instructors other than those teaching the student, and the scoring is carefully calibrated and monitored to ensure objective results. The reading department uses the Nelson-Denny Reading Test, a nationally normed standardized test as a pre- and post-test.

No college-level credit is awarded for developmental courses at DCC, but grades are included in GPA analysis.

Important Program Features

DCC's developmental program is integrated with the regular college programs that it feeds, creating a high rate of student persistence and academic success. At one point, developmental studies was a completely separate division at the college, but the current organizational structure provides better coordination with college programs and faculty. As noted, many experienced DCC faculty teach both developmental and college-level courses in their disciplines, fostering close articulation with the levels of proficiency required for college success. In English, for example, reader-based composition

Many experienced DCC faculty teach both developmental and college-level courses in their disciplines, fostering close articulation with the levels of proficiency required for college success.

is taught at all levels–developmental as well as first- and second-semester freshman composition. What varies from level to level is the length, difficulty, and sophistication of the expected student responses. In addition, English, ESL, and reading are closely connected in the division with a number of paired reading and writing courses. Math courses are constructed so as to provide foundations for the higher order skills needed in such courses as college algebra.

Evaluation Design

DCC's developmental studies program is evaluated by both external and internal means. The primary responsibility for assessing the programs performance lies with the college's Coordinating Council on Assessment and the Office of Institutional Effectiveness. A task force on developmental education comprised of developmental faculty evaluates the program by using the model implemented by the Coordinating Council and based on the five-phase format developed by James Nichols in *The Departmental Guide to Implementation of Student Outcomes Assessment and Institutional Effectiveness*. This task force tracks cohorts of students over time and analyzes data concerning students completing developmental studies. It also measures changes in student attitudes toward learning. Moreover, one faculty member from each area is assigned the duties of analyzing the numbers of those students successfully completing developmental courses each semester.

The rationale for DCC's assessment process is to provide the college with tangible documentation of the results of its educational and support efforts, as they relate the college mission and student educational goals. As mentioned, assessment serves both external state and government agency reporting and internal use to support the college's principle focus–student success. Accordingly, the Developmental Task Force includes three components in its assessment of DCC's developmental program:

- a statement of expected results;
- an assessment of results or outcomes; and
- a plan for improvement of programs in response to assessment of outcomes.

Program Performance

Students' skill gains are measured in each basic education/developmental area. In math, all deficiencies must be corrected to a 70 percent or greater mastery in order to complete a course and proceed to regular credit courses. A random sample of students completing their developmental math course shows that 71 percent successfully solve twelve problems on the final exam demonstrating mastery of the three most critical skills. Additionally, a random sample of developmental math students, at the end of the fall 1996 semester, shows that 66 percent have a positive response pertaining to their attitudes towards math and math-related activities.

A study of the reading program shows that 75 percent of the developmental reading students who took the Nelson Denny Reading Test at the beginning and end of the 1995 fall or 1996 spring semesters progressed at least two grade levels by the close of the term. The average increase for all developmental reading students was 3.69 grade levels. Seventy-eight percent of students completing developmental reading courses in the fall of 1996 responded with positive attitudes towards reading.

Gains for developmental English students are gauged by an exit exam taken at the end of the second level that replicates the conditions of the placement exam. Students are retested in the third level if they do not pass. Analysis of the 1996 fall semester shows that 45 percent of the developmental students completed their developmental English by passing the exit exam. ESL students fared slightly better, with 48 percent passing the exit exam and receiving a passing grade. A random sampling of students showed that 77 percent had improved their attitude about writing. It should be noted that the English and ESL faculty had recently changed the formats of both the placement and exit exams to correspond more closely with the college-level composition courses, which require reader-based writing and critical-thinking skills. The statistics presented

here were gathered during a time period when both faculty and students were adjusting to the new format. This change did result in slightly lower numbers of students passing the exit exam than had been reported formerly, and the English faculty are currently assessing these results.

Completers

CCD tracks developmental students in subsequent college-level courses to assess the success of its developmental studies program. In a sample semester, 68 percent of math students who had completed the math developmental sequence received a passing grade in their first college-level math course. In English, 66 percent of the students who completed the developmental English program passed their first college-level composition course. Developmental reading success, based on the pass rate in the first college-level psychology and sociology courses, indicate that 73 percent of the students who completed the developmental reading sequence earned a passing grade in Psychology 127, and 78 percent of the students who completed the sequence earned a passing grade in Sociology 151.

A group of basic education/developmental students who began at DCC in fall 1994 were tracked by the Office of Institutional Research. The results show that from fall to spring, 42.5 percent cleared their deficiencies and enrolled in regular college divisions. By fall 1995, a year after entering the college, 81 percent of the developmental students had progressed to college-level courses.

Retention

DCC's overall first semester retention rate is currently 70 percent (determined by following a cohort of first time freshman over seven semesters, fall 1994 through fall 1997). Two semesters later, approximately 50 percent of the original students are still enrolled. According to DCC's Office of Institutional Research, the retention rate for students who begin with two or more developmental courses is about the same as that for the nondevelopmental student population.

Graduation Rates

Students at DCC whose academic preparation includes developmental course work have demonstrated increased success rates in recent years. In the 1995-96 academic year, the percentage of graduating students who had taken at least one developmental course was 43 percent, an increase of 29 percent over the 1992-93 rate. Importantly, the percentage of DCC graduates who had enrolled in more than three developmental courses increased from only 1.6 percent in 1992-93 to more than 10 percent in 1995-96.

Cost Data

Developmental education has always been considered a drain on college resources. In past years, when Louisiana used formula-based funding, the reimbursement rate for developmental education courses was 22 percent higher than for similar nondevelopmental courses. Since Louisiana has moved away from direct formula funding, there is no accurate measure of what the true costs of developmental education are at Delgado.

However, an analysis of enrollment patterns for fall 1997 illustrates Delgado's high level of financial commitment to developmental education. At that time, 32 percent of all Delgado students were enrolled in at least one developmental course. The average number of remedial credits for developmental students is 5.2–more than 40 percent of a semester FTE. More than 100 full- and part-time instructors teach at least one course section of developmental education. More than half of the science and mathematics faculty teach at least one developmental mathematics course, and more than 60 percent of the communication faculty teach developmental English or reading. More class sections of developmental studies courses were taught (275) than technology courses (245) or business and business-related courses (263).

On July 1, 1997, the Louisiana Technical College–New Orleans Campus (LTC) merged with Delgado Community College. LTC was a state-supported institution that offered noncredit vocational-technical programs for adult learners. The technical school had been able to serve students who did not qualify for admission to the community college. Most LTC students had neither a high school diploma nor a GED and did not meet the minimum levels of basic academic skills established as a requirement for college admission under Ability to Benefit guidelines.

DCC wanted to serve these students, but revenue was not available to do so. LTC students were ineligible for financial aid because they were

The retention rate for students who begin with two or more developmental courses is about the same as that for the nondevelopmental student population.

unable to matriculate into credit programs, and few could fund their own education. Furthermore, Louisiana does not reimburse public colleges and universities for noncredit courses. The college thus turned to a corporate supporter for help. With a five-year donation totaling $125,000 from Hibernia National Bank, DCC is instituting a computer-based, individualized instructional program to improve basic skills so that students can meet the Ability to Benefit requirements. A key feature of the program is that academic skills will be taught in the context of vocational education so that students will be able to see the relevance of reading, writing, and math to their future careers.

Summary

Developmental education at DCC provides an important service for the New Orleans metropolitan area. It serves students who need only partial remediation, as well as students with more serious educational deficiencies. DCC provides these services at a lower cost per student than at four-year colleges and universities. Developmental courses at DCC are taught by experienced faculty in a nurturing, supportive environment. The wide variety of academic support and counseling services allow students to grow personally and educationally. DCC's open-door policy and variety of programs also offer lifetime learning opportunities that are so important to today's work force.

Chapter 8

Greenville Technical College and Kaplan Learning Services: A Joint Partnership for Creating Successful Innovations in Developmental Studies

Kay Grastie

Institutional Profile

Greenville Technical College (GTC), a comprehensive postsecondary institution, is located in Greenville, South Carolina. It has a headcount of over 9,000 students and FTE of 5,700. Each term, 30 to 35 percent of all students enroll in at least one developmental studies course. Forty-five percent of all GTC graduates have taken at least one developmental course. Twenty-eight percent of Greenville County residents lack a high school diploma or GED. These factors, coupled with a number of political and economic trends in the region and state, led the college to take a new approach to managing its developmental studies courses (referred to as Related Studies).

South Carolina is implementing an aggressive performance funding program that is being phased in through the 1999–2000 fiscal year, when 100 percent of state funding for higher education will be based on 37 performance indicators. Key indicators relate to retention, graduation rates, and other quantitative data elements that rely on measurable results, not simply providing access and helping students achieve personal goals. Although GTC's official service area is Greenville County, the college serves a large portion of upstate South Carolina with many unique programs that are attractive to the nontraditional student. The region is one of the major growth areas in the country, with an average unemployment rate for the past three years between 1.5 and 2.5 percent. Technical graduates are in high demand by major employers in the area, such as Michelin North America, Hitachi, BMW, Lockheed, General Electric, Mita. In addition, Greenville County lacks a state-supported baccalaureate degree granting institution. As a result, GTC's university transfer component is important in this service area as an entry point to higher education. Over 2,200 students enroll in the transfer division each term.

The healthy economic climate in the region has led to slow college enrollment growth. State funding has declined to only 43 percent of the budget. Tuition is "capped" at $525 per semester, or $44 per credit hour. Tuition is retained by the college locally, so the incentive to generate new dollars through recruitment and retention efforts is strong. The combined trends of shrinking revenue streams and traditional student enrollments and growing need for higher level skill training for underprepared college students and generating adequate revenue presented a major challenge for the college. Through study, GTC recognized that serious attention to developmental education would positively impact both recruitment and retention. The "return on investment" would be very high, because one-third of all entering students enroll in developmental courses.

The Former Developmental Program

Historically, one-third of developmental students qualified to exit into their program of choice each term, one-third failed the exit criteria, and one-third dropped out. The average student spent three semesters in remedial courses, although many spent much longer. Developmental credits do not count toward degree requirements, so students are basically in a "holding pattern" while enrolled in these courses. As a result, many developmental students felt that the program was not relevant to their goals for coming to college. Many were disappointed, dropped out, or did not enroll when confronted with the realization that it would take a long time before they could enter their program of choice.

Additionally, departments in the college struggled with competing interests. Credit

programs needed students and felt that the developmental area deterred students from enrolling in their programs. A tendency developed to encourage students to shortcut the college remediation process, even though this practice damaged retention rates, student success, and department and college performance. Employers pressed the college to meet demands for more technical graduates, citing the college's primary mission to support continued economic growth, as established by enabling legislation. A perception also existed in the community that most students, particularly minorities, would have to enroll in developmental studies courses if they enrolled at GTC and that they would be there for an extended time before being allowed to enter their desired career or transfer program.

Why Kaplan?

These circumstances set the stage for establishing a relationship with Kaplan Learning Services. The college knew that things had to be done differently if different results were to be achieved. In February 1997, the college entered into a partnership agreement with Kaplan Learning Services. The purpose of this partnership is to work collaboratively to examine current practices and modify the curriculum and support relationships. The collaboration hopes for a high level of student satisfaction, the implementation of varying teaching strategies, improved retention and student performance in both development causes and subsequent credit courses.

Two aphorisms embody why this collaborative partnership was attractive: (1) "if you always do what you've always done, then you will always get what you've already got," and (2) "if you are standing still, then you are going backwards." College leaders recognized that a short timeline for improvement existed, that could not be met using only college employees and resources. They felt that taking faculty away from students to concentrate on redesigning the developmental studies program would, in the interim, undermine the quality of instruction. The Kaplan-directed collaborative process allowed the intimate involvement of faculty, staff, and administration in a creative mode where the best expertise of both partners could be used.

College leaders wanted fresh ideas and knew that it would be hard to "step out of the box," while "living in the box," even if committed and willing to do so. An outside viewpoint to explore, examine, facilitate, concur, and move the college in new directions was critical to accomplishing timely changes. Because GTC perceives developmental studies to be the "heart" of the college and its foundation, this area has to be well positioned to point the college toward a sound future in which GTC can operate in a difficult marketing, recruiting, budgetary, and instructional climate.

The college knew that things had to be done differently if different results were to be achieved.

The college outlined three goals for the partnership with specific activities targeted to meet each of the goals:

1. Provide a more "user friendly" assessment experience for prospective students.
2. Improve the image of developmental studies internally and externally by adding relevant content and faster results in helping students progress into their program of choice, including fast-track or flexible entry points to accept students and exit them at different points in the term.
3. Improve enrollment through better retention.

Making Assessment and Enrollment a More Positive Experience

Initial activity centered upon the first two goals. At first, there was concern because 20 percent of the 2,600 students tested in the previous year failed to enroll after testing. Many simply did not return for appointments to receive their test results. Follow-up surveys found that these prospective students were discouraged by the testing process and felt little hope of entering their program of choice. Working with Kaplan, the college implemented test review workshops to familiarize students with what was expected of them on the COMPASS and ASSET entry assessments. This was a direct attempt to alleviate students' anxiety and to give them a chance to "test their best." One objective was to enroll more of those who had applied and tested by giving students a higher comfort level prior to assessment. A decision was made to allow those

who had taken the test to take the workshop and retest one time. These steps proved to be successful both in helping students place higher in the developmental course sequence and in reinforcing the validity of the assessment process to students.

The workshop, College Success Skills, is a review that offers test-taking tips relevant to any college course or assessment instrument. It does not "teach the test," but rather provides six hours of basic skills instruction–two hours each for reading, writing, and mathematics. In addition, college staff and faculty are trained by Kaplan to deliver the workshops to assure that the assessment process is not compromised. Kaplan, as a leader in test preparation, has a reputation for emphasis on evaluation. They carefully track students to verify that the workshop only assists students in demonstrating or refreshing previous knowledge. Evaluations to monitor accuracy of placement has been incorporated for all workshop participants.

The review workshops have provided financial and motivational benefits for students. Students report that the workshops save them time and money by helping them place into higher levels of developmental studies or directly into their program of choice. In addition, the workshops have been a major recruiting and public relations asset for the college. The workshop alleviates student fears and allows them a second chance if they do not test well the first time. This makes them feel that the college cares about them. The students also get an excellent first impression of the college since they are taught on-campus in groups of 25 to 30 by college employees. Students interact with caring, concerned, and competent staff and faculty. Such "recruitment" is invaluable. Nontraditional students are particularly appreciative of the opportunities provided by the workshops, although many high school students also have taken advantage of the program.

Kaplan designed the workshop materials and included information relevant to the enrollment and admissions process. Faculty and staff who serve as workshop leaders were trained by Kaplan master teachers. Continual follow up between the teachers and student support staff is provided to refine and enhance the experience.

The data speak for themselves: of the total students tested from April through September 1997, 85 percent of those who took the College Success Skills Workshop (CSSW) enrolled for classes compared to 74 percent of those who did not take the workshop. Overall college enrollment increased 6.7 percent for fall 1997 and 4.5 percent for spring 1998, reversing a long-standing pattern of static enrollment rates in previous terms.

Of the 514 CSSW students, 59 percent improved their writing scores with 37 percent testing out of developmental writing; 67 percent improved their reading scores and 57 percent tested out of developmental reading; and 39 percent improved math scores with 7 percent testing out of developmental math. Generally, students whose scores improved went up one course level.

The feedback from students, student services personnel, the community, and faculty, combined with supporting data from this initial new assessment and enrollment experience, encouraged the college to give the Kaplan partnership even stronger emphasis. This early evidence suggests that GTC is well on its way toward meeting its goals of providing a more "user-friendly" assessment and enrollment process and enhancing the image of developmental studies for improved recruitment and enrollment.

Refueling the Curriculum

GTC's redesign of developmental coursework in reading, writing, and mathematics is specifically targeted to improve student retention. Because students are more likely to enroll and persist if they feel they are in college, doing college-level work, and gaining skills and knowledge applicable to their career or transfer goals, students must be satisfied that their developmental courses are relevant to their ultimate educational goals.

The traditional GTC developmental studies program offered two types of delivery systems: (1) an open entry/open exit self-paced lab using individual study schedules, and (2) classroom, print-based, traditional didactic coursework. Although students in both learning formats had access to a well-equipped learning lab, and computer-based supplementary materials, collaborative learning, and other alternative strategies were used, these approaches were not consistent across instructors or courses. One advantage obtained with the Kaplan partnership was an opportunity for a systematic and cohesive approach to all reading, writing, and mathematics

courses. Kaplan offered a comprehensive design for curriculum development that was supported with specific materials, texts, and teacher development, which provided continuity throughout the entire developmental sequence of courses.

Kaplan facilitated a process to "re-invent" GTC's developmental courses so that they would look, feel, and be like a college-level course and tie directly to future courses, texts, and careers. These courses challenged students and college employees in new ways. This was an important aspect of the redesign process, since college staff often started sentences with "but these are developmental students." This perspective narrowed expectations and often imposed artificial limitations for students rather than challenging them to achieve their best.

In August 1997, two newly designed courses each in reading, writing, and mathematics were implemented with 1,602 students (approximately half of the enrollment). These courses had been developed collaboratively during the previous seven months by Greenville faculty working with learning specialists, curriculum specialists, teachers, and production staff from Kaplan. In addition, training sessions for faculty occurred throughout the summer. In the fall semester, 19 full-time and adjunct faculty taught the courses during days, nights, and weekends. These faculty were volunteers selected in consultation with college departments and Kaplan staff.

Although Kaplan played an important role in the design process, the new developmental studies courses are Greenville courses, taught by Greenville faculty, for Greenville students. The partnership is not a third-party arrangement, outsourcing, or a proprietary relationship that threatens faculty job security. It is not a means of reducing faculty costs, but rather a more cost-effective system of instruction. If the desired outcomes are achieved, retention will improve, students will be more satisfied, and short- and long-term enrollment will grow. Course integrity, competencies, and standards are assured through continual faculty involvement and constant revisions and communications. In addition, Kaplan works from the viewpoint that these developmental courses must successfully connect students to their next courses. All faculty are aware of the emphasis on clearly identifying the requirements for success in subsequent courses and assuring that students achieve those concepts, skills, and standards.

The partnership focuses attention on developmental instruction, collegewide and at the discipline level. The courses blend the best practices currently in place at GTC with new solutions to problems, new ideas and approaches. Faculty interactions and discussions about their day-to-day classroom experiences occur regularly as each new unit is presented. Teachers, who were initially concerned about becoming "teacher robots," have found that Kaplan encourages them to retain the best of their practices and experiences and to emphasize their own individuality and personality. Maintaining faculty autonomy and integrity was a major factor in making the partnership decision. It was clear from the training manual and preliminary discussions with Kaplan representatives that teachers would be central to the curriculum redesign process. Such emphasis is reflected in the Kaplan training manual through statements such as: "Students remember their teacher, not their textbook," and "It is the one-on-one interaction between teacher and student that will make the difference between focus and confusion, between panic and control, between motivation and inertia." Because Kaplan personnel acknowledged the central role of the teacher and shared the learner-focused values of Greenville Tech faculty, a compatible frame of reference developed that formed a basis for creating an effective developmental education program.

Teachers, who were initially concerned about becoming "teacher robots," have found that Kaplan encourages them to retain the best of their practices and experiences and to emphasize their own individuality and personality.

The Kaplan "partnered" courses have a consistent theme and structure–preparing, orienting, and teaching students to successfully use college-level materials, college-level skills, college-level attitudes, and college-level confidence. Each course is based on a model of discovery followed by explicit instruction. Each course also blends reading, writing, listening, and speaking in an active learning, "risk-free" environment. Students experience peer as well as teacher support, as both help build self-confidence and specific discipline skills. Teachers

and support services are linked in a concentrated fashion to coordinate all resources and to assist and enhance student success. Although this had been done previously, the partnership pays more attention to consistent use of support services at critical intervention points.

In their second semester of delivery, the new courses are still primarily print based. With assistance from Kaplan, however, the college now uses software supplements that correlate with the text and course design. This component will become more prominent, as will use of other media, as the courses continue to evolve. The textbooks complement the philosophy of the curriculum. They are low-cost "worktexts" which are "user friendly" and not intimidating. The interactive nature of the worktext actively involves the student in the learning process, and the text language is not highly academic. Proper terminology is introduced to make sure the student understands the concept and is prepared for its use in subsequent courses. Language, however, is not a barrier to introducing concepts and information in these texts.

Another difference in the revised developmental studies approach is the use of college-level text passages in the new language arts courses. Since these passages are extracted from typical texts used in technical and university transfer credit courses, students can relate assignments and class activities to future college work. This reinforces the application of the material and acquaints reading and writing students with a variety of text materials, which they will encounter when they enter their chosen course of study. Math courses use problems and examples commonly found in local businesses and industries where students will be employed or are currently employed. Text passages and workplace examples mirror typical college-level expectations.

In addition, the new language arts classes use learning contracts. This approach supports a "risk-free" environment in which every student has a chance to achieve an "A" by fulfilling the requirements. Students know up front what is expected to earn each grade and are motivated to fulfill their contracts.

Reading and writing connections are strong elements of all courses, including mathematics. Students do more writing in the new reading and mathematics courses than had been previously required. Answering questions and collaborative learning are focused parts of each unit of all courses. Group work in mathematics and in language arts courses has changed classroom dynamics. Students as "community of learners" more readily assist one another and interact more freely during daily activities. As one mathematics faculty put it: "My students were actually *talking* about mathematics."

An interesting component of the language arts courses is use of audiotape recordings of readings. Student listen to each passage to hear correct academic prose, then they prepare their own tape recording of the passage. This feature has been an especially strong addition to the developmental courses. It has strengthened students' self-confidence and skills in reading aloud in class, participating in class discussions, and communicating with faculty. A hidden benefit has been that some students use the tapes to mention things to faculty that they might not otherwise "discuss," thus the tapes are a communication tool for the student and instructor to extend their interactions. In addition to serving as a major aid to student comprehension and vocabulary recognition, this oral component is a unique feature and one that is often lacking in developmental studies coursework.

Another unusual feature of the new curriculum is how it expands developmental students' knowledge and interest in topics and issues they normally might avoid or would not encounter. The computer-based instruction is also unique in that it incorporates use of the Internet and Encarta, rather than depending on an integrated learning system for computer activities. Students do background research for the college-level passages they are working with in the language arts courses. In doing so, they learn research skills required for later credit courses and acquire self-confidence in their ability to navigate and use a computer for more than drill purposes. In selected reading units, newspapers and magazines form the basis for text material and provide exposure to current events and other topics not typically available for developmental reading courses. Throughout the language arts courses, students formulate opinions through the process of writing a summary and responding to each passage.

A "capstone" unit combines skills encountered throughout the language arts worktexts and allows students to demonstrate to themselves that they can be successful in

managing more complex assignments. These courses model college-credit course requirements such as a research paper. In addition, these courses continually focus on teaching students how to learn and integrating college and practical skills with critical thinking skills. Topics such as "dissecting a text," "understanding boring passages," and "notetaking," are all included. Teachers model and reinforce "learning by doing" and asking "why?" rather than "what?"

Throughout the new developmental curriculum at GTC, there is a definite emphasis on transferable skills that give students the tools to succeed in college work, not simply to get through the developmental course. In summary, faculty and students have more energy and interest in learning in these classrooms. Early results indicate that both the subtle and clear differences are translating into positive trends toward improved student performance and persistence.

Evaluation Process and Early Results

In the second semester of the revised developmental studies approach, 24 faculty and over 1,350 students are participating. Because Kaplan has a history as a results-oriented company, one of their own requirements is for their partner to establish a rigorous evaluation process.

The following evaluation methods, many of which are already in place, are designed to assess the performance and quality of the new developmental studies program: use of the standard student evaluation administered each term for all faculty and courses; grade distribution analysis for comparison of new courses to standard courses; success rates (defined as A, B, or C) for new courses as compared to standard courses; success rates (defined as A, B, or C) and grade distribution in subsequent courses during the next term of enrollment; comparison of persistence in new courses and completion rates versus standard courses; longitudinal analysis of student performance for a cohort of students in the new courses versus standard courses, to include retention rate, academic success and performance, and graduation rate.

Other qualitative assessments are also part of the evaluation model, such as classroom observations on a regular basis by Kaplan and college staff (deans, team leaders, Kaplan On-Site Program Manager, Kaplan faculty coordinators for language arts and mathematics, and peers); comparisons of student writing sample and portfolios from beginning to end of term; focus groups and anecdotal feedback from students; and ongoing faculty meetings and feedback sessions conducted by faculty coordinators, the Kaplan curriculum design team, the Kaplan National Program Director, and the Kaplan National Director for Professional Development.

Although only first semester data is available at this time and some analysis is still incomplete, the early trends are positive. Only students who completed the courses and earned a grade of A, B, C, D, F or I are included in these data. In the basic reading course, a greater percentage of Kaplan students (68 percent, N = 75) than non-Kaplan students (34 percent, N = 324) earned a passing grade of A, B, or C. However, for advanced reading, a greater portion of non-Kaplan students (94 percent, N = 16) than Kaplan students (89 percent, N= 204) earned passing grades of A, B, or C.

In the writing courses, a greater percentage of Kaplan students (80 percent, N = 82) than non-Kaplan students (39 percent, N = 383), earned a grade of C or better in the basic developmental English. A similar percentage (70 percent) of Kaplan (N = 304) and non-Kaplan students (N = 145) earned a grade of C or better in advanced writing. Significantly more students in the Kaplan writing sections earned a grade of A, which seems to be linked to the use of learning contracts as powerful motivators for higher achievement in the Kaplan courses.

For mathematics courses, a slightly larger percentage of Kaplan students (73 percent, N = 40) than non-Kaplan students (69 percent, N = 229) earned a grade of C or better in basic math. In addition, a greater percentage of Kaplan students (65 percent, N = 311) than non-Kaplan students (52 percent, N = 439) earned passing grades of C or better in advanced math.

Re-enrollment for spring semester has also been analyzed in order to monitor term-to-term retention. For basic math, 78 percent of the students enrolled in Kaplan sections re-enrolled, while 71 percent of students in non-Kaplan sections re-enrolled. In advanced math, 75 percent of students in Kaplan sections re-enrolled versus 65 percent in non-Kaplan sections. In basic reading, 62 percent of Kaplan section students re-enrolled versus 60 percent of non-Kaplan students. For advanced reading, in both Kaplan and non-Kaplan sections, 69 percent re-enrolled.

In writing, 57 percent of Kaplan students re-enrolled while 56 percent of non-Kaplan students re-enrolled. Sixty-four percent of Kaplan advanced writing students re-enrolled while in non-Kaplan sections, 71 percent re-enrolled. For both college-level and developmental students, the average retention from fall to spring semesters has been in the 60-65 percent range. Historically, developmental studies has reflected approximately the same averages.

Summary

Although the partnership is young, it has benefited the college by serving as a catalyst for a serious and thorough scrutiny of its developmental studies program. This process has generated a heightened awareness and appreciation of this program's importance to the institution. Program strengths as well as areas for further improvement or assessment have been identified. Faculty and administration have focused attention and resources to enhance support to this area of the college. The emphasis on making the entry assessment and admissions process a better experience for students has also created stronger bonds between instruction and support areas responsible for recruiting, admitting, and advising new students and applicants. As the partnership progresses, trends from retention data and performance in subsequent courses will guide Kaplan and the college in revising courses and worktexts.

Developmental students success rates in key courses are typically 10-15 percent below that of other students. No dramatic improvement in retention or success rates will occur in the short term. Over a three-year time period, however, the partnership expects to achieve significant gains through the comprehensive and consistent approach that continually focuses students on learning to learn and feeling connected to college-level work. Kaplan and Greenville Tech envision an ongoing refinement and continual interaction that allows dynamic change to the curriculum and updating of texts on an annual basis to reflect teacher input, student reactions, and evaluation results. Rather than a static program, it will continue to thrive and evolve through guidance and support from Kaplan's entire company of resources. This new approach to developmental education completely changes the nature of the curriculum and the classroom, because it gives a "hands-on" opportunity for all faculty participants to influence, shape, and share the vision of how and what they are teaching in a timely, exciting, and unique manner.

Chapter 9

The Guilford Technical Community College Developmental Education Program

Sylvester E. McKay, Ellen McCoy Red Shirt, and Martha C. Hickey

Institutional Profile

Guilford Technical Community College (GTCC), fourth largest of 58 community colleges in the North Carolina System, is located in Jamestown, in the north central (Piedmont Triad) part of the state. It serves 383,400 Guilford County residents with 165 associate degree, diploma, and certificate programs. Guilford County is home to two cities, Greensboro and High Point. The Piedmont Triad area is heavily industrialized, with over 500 manufacturing companies and over 34 percent of the labor force in 150,000 manufacturing jobs. As is true for the whole state, the educational attainment level of the county population is poor: only 76 percent of residents over the age of 25 have a high school diploma or the equivalent, leaving 90,000 with less than a high school education. According to the 1990 census, median family income was $36,754.

As a comprehensive college, GTCC offers 165 college credit programs and a wide array of noncredit programs and courses. Of the 165 college credit programs, 31 are college transfer programs, 58 lead to applied science degrees, and 50 are certificate programs. Noncredit offerings include Adult Basic Education, GED and Adult High School Diploma programs, business and industry training, new and expanding industry training, and a wide variety of occupational extension and adult enrichment programs. In 1996 and 1997, college credit enrollment was 10,000, and noncredit enrollment was 27,414. The total enrollment of accounts for approximately 10 percent of the service area population. The county is also home to two state universities, four private liberal arts colleges, and a number of private, for-profit trade schools.

GTCC has many distinguishing features, perhaps most notable is its involvement in area economic development. In a period of two years, Guilford County's College Tech-Prep/School-to-Work program has developed seven career pathways for high school students, each with a youth apprenticeship program. Program completers are offered full tuition and fee scholarships to go on for the associate degree. The local Job Ready Partnership has gained national recognition because of the uncommon cooperation and commitment of the public school system, GTCC, area chambers of commerce, and local businesses and industries.

The college is a leader in distance education, offering an impressive array of courses on the North Carolina Information Highway via four two-way audio-video interactive classrooms. Numerous telecourses and Web-based courses are available.

Considerable recognition has also been accorded GTCC and its partner, the Guilford County Schools, for the CIBA Foundation Grant-funded *Employability Skills Curriculum Integration* project. Through this project, teams of high school and college faculty are given training in the latest and most effective techniques for delivery of instruction. To learn firsthand the importance of the essential employability skills in today's workplace, faculty members have been given the opportunity to visit local industries and meet with and observe managers to learn about the essential employability skills in today's workplace. Now in the third year of the project, participating faculty are using their new skills to assist their colleagues in integrating employability skills into all curricula.

The Developmental Program

GTCC's developmental studies program began in 1969 with the help of a federal grant. It has been distinguished by required placement testing and mandatory placement. The objective of the program is to provide instruction to students deficient in basic reading, grammatical writing, math, and life skills. Students are assisted in acquiring the entry-level skills necessary for success in college programs. The essential entry-level skills were defined via a modified DACUM

(Developing a Curriculum) process completed by a panel of faculty representatives from many of the college's associate degree programs. The entry-level skills that were identified became the basis for the Developmental Education Program's competency-based curriculum. The department uses a mastery learning approach, and students must demonstrate competency at a minimum 80 percent level to progress to the next course level or into college-level courses. The college awards institutional, nondegree credit for developmental education courses.

Early on, GTCC recognized the importance of providing (and even requiring) remediation for its students, rather than allowing them the "right to fail," as was the practice in many community colleges in the 1970s and 1980s. College officials quickly recognized that in this open-door college, they must assume responsibility for providing appropriate educational opportunities for all. The underlying belief was that if underprepared students are to have a reasonable chance of success in college-level courses, they must begin in courses geared to their entry competencies. That philosophy mandated initial skill assessment and basic academic skill instruction on a wide range of levels. GTCC willingly provided underprepared students these opportunities, and consequently, the *hope* of success in their chosen program of study.

Developmental Education is a separate academic department in the College's Arts and Sciences Division. The department employs 13 full-time faculty members (6 math, 2 reading, and 3 English, plus a Skills Lab/Tutoring Center coordinator and the department chair) and 21 part-time members. Although faculty occasionally teach college credit courses for other departments, they are hired specifically as full-time instructors in the Developmental Education Department. A full-time administrative assistant provides clerical assistance to the faculty. Department faculty coordinate with Counseling Center and Disability Access Services staff members when students demonstrate a need for accommodation, counseling, or intervention beyond that provided in the academic advising process. This cooperative relationship is essential, particularly for developmental students.

Instruction has shifted over recent years from a self-paced format to a combination of lecture, self-pacing, and discussion with additional help available through the Skills Lab/Tutoring Center. In moving away from the self-pacing concept, the department has been careful to preserve the right of the student to proceed at a comfortable pace. It offers a nonpunitive grade (X) for those who are progressing but have not completed course requirements.

A unique and longstanding feature of the program is the Skills Lab/Tutoring Center. The Skills Lab functions as a classroom supplement. In a comfortable environment, students benefit from a variety of instructional materials provided by well-trained instructors in formats ranging from print to audiovisual to computer based. Students have a place within the department where they can receive additional assistance. The Tutoring Center, housed in the Skills Lab, provides no-cost peer tutoring services to all credit students. The location of the center in the Skills Lab is quite convenient for developmental students.

Instruction has shifted over recent years from a self-paced format to a combination of lecture, self-pacing, and discussion with additional help available through the Skills Lab/Tutoring Center.

Developmental education student profiles vary considerably. In recent years, more younger students have enrolled at GTCC, as the reputation of the college as a viable transfer institution has grown. A recent survey of students revealed that 57 percent are recent high school graduates (3 years or less) and have only a GED or adult high school diploma. A large majority (82 percent) are enrolled to acquire a degree, diploma, or certificate, but 10 percent are undecided and 58 percent plan to continue their education at a baccalaureate level institution. Seventy nine percent work either full- or part-time and 12 percent do not speak English as their native language. The racial/ethnic breakdown is as follows: 35 percent African American; 52 percent Caucasian; 2 percent American Indian; 6 percent Asian; 2 percent Hispanic; and 3 percent other. Minorities comprise 43 percent of the student population. Reflecting the proportions in the student body over all, more than half the underprepared students (51 percent) are female.

In 1991, GTCC identified African-American males as the highest-risk segment of the student population. Following that identification,

developmental education program faculty wrote a grant proposal and received funding to initiate the African-American Male Mentoring program. In 1992, this program allowed the department to provide mentors from among faculty, staff, students, and community representatives. One of its most successful elements was the establishment of a peer support group which met weekly with mentors to discuss academic, personal, and social coping skills. For many of these young men, it was the first opportunity to hear the views of peers who were making similar life changes and to interact with numerous strong adult male role models. The project coordinator brought in a series of speakers who were accomplished adults from the community, mostly African American. The following year, Student Support Services institutionalized the African-American Male Mentoring program and expanded it to include other high-risk students. The program is thriving today.

Another program initiative, started by the department and later institutionalized, was the Learning Disabilities program. One of the department faculty members teamed with a learning disabilities counselor to develop, market, and implement a collegewide learning disabilities program. This substantial effort determined program parameters, procedures, and student eligibility guidelines; decided what services would be available; marketed the program; and educated faculty, support staff, students, and parents. During its early stages, the two staff members met with every division on campus and made presentations to off-campus advocacy groups and local Parent-Teacher Associations. Together they were able to start the program and mold it into a thriving, effective entity. It has since been expanded into the Disability Access Services unit of the Student Services Division. The unit now employs three full-time professional staff and numerous classroom assistants, from sign language interpreters to readers, scribes, and notetakers.

Departmental Features

The developmental education program at Guilford Technical Community College has many distinguishing features. In 1986, the National Center for Developmental Education recognized it as an exemplary program. Then, in 1993, the North Carolina Association for Developmental Education, an organization for community college and four-year institution developmental educators, selected the program as an outstanding developmental program. It made the program its nominee for the 1994 National Association for Developmental Education (NADE) outstanding award. The program was subsequently selected to receive NADE's 1994 John Champaigne Award for Outstanding Developmental Program.

Another distinction relates to the average years that faculty have been on staff. Full-time faculty average 14.5 years of service, and part-time faculty average 7 years. This unusual longevity may be interpreted as an indication that department faculty experience a high degree of professional satisfaction in their developmental education teaching responsibilities.

Also notable is the unique means of providing support for the large number of part-time faculty. In the early 1980s, the faculty conceived the idea of having full-time faculty members in each content area rotate annually as assistant coordinators. Each academic year, a reading, English, or math faculty member takes on the role of mentoring and providing support to the part-time faculty in their content area. The concept has continued in practice for nearly 16 years. Part-time faculty are enthusiastic about this designated resource person and willingly call for assistance. This participation by all faculty members in helping make administrative decisions affecting their content area has resulted in continuous program improvement and a higher awareness of program particulars than one might expect. Because decisions affecting instruction are made at the content level, faculty members feel real ownership of "their" programs.

Since the department is committed to mastery learning, the assistant coordinators are instrumental in providing consistent guidelines, standards, materials, and tests for all content area courses. This is essential in maintaining consistency in instruction, assessment of student achievement, and application of departmental and content-area policies.

One example illustrates the developmental education faculty's leadership in their field. For several years, the department struggled to find effective ways to help international students and refugees understand and use both written and spoken English. It soon became apparent, however, that faculty needed to teach students for whom English was a foreign language

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differently than native students. International visa students are required to take the Test of English as a Foreign Language (TOEFL). They usually score well enough on GTCC placement tests, therefore, developmental course work is not needed. Local residents and immigrants (who do not take the TOEFL) experience the most difficulties. Their main problems of language seem to be more with the spoken word than with the written word. To prepare to address the problem, faculty visited existing programs and researched the topic. By 1995, they developed and began offering the first English as a foreign language courses. Two courses were developed: Understanding and Speaking English I and II. With an emphasis on listening and speaking in the American college classroom, the first course centers on active listening and appropriate responding skills. The second focuses on the more advanced skills, involving understanding and using idiomatic expressions and listening and responding in both formal and informal settings. In 1995-96, a statewide writing team learned that GTCC was one of only a few colleges in the state to have developed courses in listening to and speaking the English language.

Finally, students and college credit faculty show high regard for the commitment to student success and continuous quality improvement. Students express appreciation for the individual attention and support available to them, and college credit faculty cite the quality of the preparation provided the students. The cooperation by the developmental faculty with other college departments is considered to be exemplary.

Program Evaluation

In fall 1997, GTCC, along with all the colleges in the North Carolina system, transitioned from a quarter system to a semester system. Just prior to the "re-engineering" that took place over the two previous years to prepare for the transition, a statewide student tracking/program evaluation system was in development. Implementation of the system was delayed because of massive changes in course nomenclature and structure, the development of a statewide common course library, and consistent curriculum standards. GTCC developmental faculty, along with faculty from other community colleges, have been involved in proposing features of the new system, which, it is hoped, will be in place beginning in the fall semester 1998.

The new system is expected to track community college developmental students' progress through developmental courses and into college courses and assess both retention and academic success. The system will track students until their exit point, whether it be graduation, completion of a certificate, withdrawal, or not returning following a completed term. The system will also allow identification and continued tracking of former students who, after a period of absence from the college, return to pursue their education. It is also hoped that the University of North Carolina General Administration will soon agree to provide better and more complete data than that presently gathered concerning students who have transferred to UNC system institutions.

In the interim, GTCC's developmental faculty have used data generated from several sources–both institutional reports and departmental files–to assess the program's effectiveness. The data available do provide some important indications of program effectiveness, but they fall short of that which will be provided by the new system. At present, program evaluation is a shared responsibility, though it is initiated by the Office of Institutional Research and Planning. The college conducts program reviews of all academic programs and support services annually for several purposes: (1) to meet state reporting requirements, (2) to evaluate institutional effectiveness, and (3) for continuous quality improvement.

The developmental education program reviews are studied each year, and actions for improvement are determined for the following year. In addition, the college produces course analysis reports each term which provide valuable data about student retention and success rates–by course, by instructor, and by department. This permits faculty members to evaluate their

own statistics in comparison with those of others in their department, the division, and the college as a whole. The division chair, the instructional vice president, the president, and the board of trustees review the reports. Each year, the vice president presents summaries of all program evaluations to the board of trustees. This review process often results in recommended improvements.

Until the implementation of the new state tracking system, the institution has to gather and analyze data manually in order to determine student success in next-level college courses. Currently, it is impossible to follow a nondevelopmental comparison group. Likewise, data provided to the community colleges by the University of North Carolina General Administration is in aggregate form, not identifiable by individual student. The General Administration reports to the community colleges give data only concerning community college students who transfer each fall to system universities as sophomores or above. Data for students who transfer during spring or summer terms or transfers to private colleges are not available. It is, therefore, not possible to determine the transfer rate and degree of success of former developmental students. Efforts are underway to improve the existing tracking and reporting system. We believe, however, that data we are able to analyze does, in fact, demonstrate the effectiveness of the GTCC Developmental Education program.

Program Performance

Course analyses have provided data concerning success and retention rates of students within developmental courses. A sample of students in three developmental terminal courses was studied to assess these outcome measures.

Student Success in Developmental Courses

The developmental education program is competency based. The grading structure indicates skills have been attained by the students. Students must achieve 80 percent competency on each skill prior to admission to the next course. The institution defines success rate as the percentage of C or better grades in a given class.

Determination of skills gained by students is based on the three terminal developmental courses which were offered prior to the conversion to the semester system. Developmental Composition (GSE093) is designed to provide proficiency required for college English. The course focuses on developing entry-level skills through the writing process. College Reading and Study Skills (GSR091) centers on the application of reading comprehension skills, critical reading, and study techniques to college-level textbooks. Introductory Algebra (GSM093) is an introduction to the basic techniques of algebraic manipulations. Topics include review of signed numbers, real numbers, properties of real numbers, order of operations, solving equations and inequalities, operations and factoring of polynomials, rational expressions and equations, and introduction to radical expressions and equations.

An analysis of data between fall 1995 and spring 1997 revealed a 69 percent student success rate. The success rates for these terms ranged from 66 percent to 72 percent. Of the 4,765 students who completed these courses, 23 percent earned grades of A, 33 percent received Bs, and 14 percent received C grades.

Student Performance in College-Level Courses

The same sample (those enrolled in GSE 093, GSR 091, and GSM 093 in fall 1995) was studied to determine performance in a subsequent selected college-level course considered the course most likely to require the competency taught in the developmental course. For example, records of students who took GSE 093 were studied to determine their grades in ENG 111/151 composition. For students who took GSR 091, grades in ENG 111/151 composition were examined; and for students enrolled in GSM 093, their grades in MAT 163 college algebra were studied.

Grades earned in developmental English correlated with grades earned in the first college-level English course (composition), chi-square = 52.08, df = 24, $p < .01$. Similarly, grades earned in developmental reading paralleled grades earned in the first college-level English course, chi-square = 53.40, df = 30, $p < .01$. In both cases, successful completion of the terminal developmental course related to successful completion of the first college-level English course. Students who earned a D or F in the developmental courses often withdrew or failed their first college-level English course.

The analysis found a nonsignificant relationship between grades in the developmental math course and grades in the first college-level math course (college algebra), chi-square = 27.98, df = 24, p > .05. Further review of the data determined that only 27 percent (n = 16) of the students who completed the terminal developmental math course went on to take the college algebra course. The sample size needs to be increased before conclusions can be drawn.

Student Retention

Within the course. For the fall term 1995, in the sections covered in this analysis, there was a 76 percent retention rate with a 71 percent success rate. GSM093 had a retention rate of 65 percent with a 79 percent success rate. GSR091 had a retention rate of 86 percent with a 72 percent success rate. The data indicates that the majority of students in these classes were retained and mastered the required competencies.

Within the college. Of the developmental students in the sample who enrolled in GSE 093, in the fall quarter, 53 percent returned for the winter quarter; 47.5 percent returned for the spring quarter; and 63 percent returned *either* winter or spring quarter. By comparison, 74 percent of all students enrolled in the college for fall 1995 returned *either* winter or spring quarter. In addition, 47.5 percent of these GSE 093 students returned fall 1996. Of those enrolled in GSR 091, 62.5 percent returned winter quarter; 54.5 percent returned spring quarter; and 69 percent returned *either* winter or spring quarter, compared to the 74 percent collegewide return rate for the same period. In addition, 42.7 percent of these developmental students returned to the college the next fall.

Of a sample of students enrolled in the fall quarter in GSM 093, 50 percent returned winter quarter; 41.3 percent returned spring quarter; and 57 percent returned *either* winter or spring quarter. Again, the collegewide comparison figure is 74 percent. Thirty-six percent returned the following fall.

Cost Data

The program reviews completed annually by the college provide enrollment and cost data. Between the academic years 1991-92 and 1995-95, only seven to eight percent of the college's total budget FTE was earned as a result of offering developmental education classes. While the department expended between $551,297 and $591,135 annually during this time period, the FTE cost was well below the rate at which the college is funded. The cost per FTE has ranged between $1,552 and $2,008. The primary fact in determining FTE cost is the number of full-time faculty employed during a given academic year.

Summary

A number of implications for future study clearly derive from the analysis described in this chapter. First, it is essential that the automated tracking system anticipated in fall 1998 be put in place. This will allow appropriate data to be gathered in a routine manner. Although the study described clearly shows the impact of the reading and English terminal developmental courses on performance in the first college-level English course, the math study was inconclusive. It is certain that a larger sample should be studied in order to draw valid conclusion concerning the impact of developmental math on performance in the first college level math course.

GTCCs nationally recognized developmental education program has been an essential component of the college for nearly thirty years, serving essential student needs and providing models for instructional innovation. A review of the history and comprehensive offerings of the developmental studies program at GTCC reveals that not only are these programs successful in helping students prepare for college-level work in a timely and effective manner, they are cost-effective units of the institution and valuable contributors to the community.

Finally, the writers wish to acknowledge the assistance provided by members of the Developmental Education staff and others: Thomas Coaxum, Janie P. Stilling, Claire Hunter, Linda Whisnant, Betty Kittner, Barbara Van Dusen, Phyllis Townsend, Sandra Smith, and Lisa Woods.

Chapter 10

EDUCATION THAT WORKS: PORTLAND COMMUNITY COLLEGE

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Institutional Profile

Located in the largest metropolitan area between San Francisco and Seattle, Portland Community College (PCC) serves a 1,500 square-mile area and a population of over 800,000 citizens. Service areas are comprised of urban, suburban, and rural communities, ranging from the city of Portland, with a population of 450,000, to the town of Vernonia with a population of 2,345. The socio-economic status of the population is equally varied. In Northeast Portland, both families with the highest average income and the most intense pocket of poverty and unemployment exist almost side by side. In Washington County, the scene of burgeoning growth in the semi-conductor industry, a growing population of Hispanic families struggle to find living wage jobs, to achieve literacy, and to keep their children in school. In Southeast Portland, the home of the most prestigious country club in the state and an elite, national liberal arts college, poor white families move from one rental to another, a step ahead of the landlord, with little hope for economic independence.

As in every other part of the country, the correlation between education and relative financial independence is remarkable and indisputable. Even with an unemployment rate of less than four percent, the ticket to living wage jobs continues to be education and training. For too many of its citizens, however, it is not just a matter of enrolling in a job market relevant program and moving on to better employment and a high-skill, high-wage job. Increasingly, the citizens who need jobs lack the basic skills to succeed in school or job training programs that could lead, for example. to stable and living-wage employment in the growing semi-conductor industry. PCC offers these citizens, whether just leaving high school or adults, a variety of opportunities to shape their futures more positively and to move from dependence to independence. Without these college programs, a significant number of our citizens, many of whom are women, minorities, and older adults, would never be able to enter regular postsecondary education programs or even access entry-level jobs that might lead to an education and career ladder.

College Programs

PCC offers basic skill and precollege programs as one part of a comprehensive mission to serve the people of its communities. In the 1996-97 academic year, 86,000 students enrolled in a variety of one- and two-year degree, certificate and noncredit programs. Forty-five percent were enrolled in credit programs and 55 percent in noncredit courses. Of its credit students, 50 percent were enrolled in courses leading to matriculation at baccalaureate institutions, and 36 percent were enrolled in professional-technical programs. Fourteen percent of its credit students were enrolled in credit courses that do not lead to a degree. Importantly, more than nine percent of the total student body were enrolled in noncredit adult education courses, including adult basic education, GED programs, and English as a Second Language. Three percent of its students were enrolled in credit-bearing remedial courses designed to help students succeed in academic and technical programs.

Degree programs at PCC take place at all three comprehensive campuses. These campuses are located in urban, suburban, and suburban-rural settings. In addition, through its Open Campus, the college offers a variety of short-term and special purpose programs at three major workforce centers and at as many as 200 other community and workplace locations. Invariably, basic skills courses, whether ESL, GED, ABE, or remedial are found on every campus, at each workforce center, and at many other sites throughout the community.

Without these college programs, a significant number of our citizens, many of whom are women, minorities, and older adults, would never be able to enter regular postsecondary education programs or even access entry-level jobs that might lead to an education and career ladder.

The average PCC student is 36 years old. Minority enrollment is 18 percent, with African Americans comprising four percent, Asians eight percent, Latinos five percent, and Native Americans one percent of the student population. Fifty-seven percent of the students are women.

Basic literacy programs and narrowly defined remedial programs have always been a part of PCC's mission and tradition. What has not always been a part of that tradition is an ongoing, systematic, and rigorous evaluation of the program's effectiveness. While enrollment figures and anecdotal reports provide some indicators of program success, they cannot constitute the whole picture. By themselves they are insufficient to persuade more critical audiences, especially those who view any form of college remediation as continued deficit spending. Over the past several years, PCC has had the opportunity to focus evaluative research criteria on a variety of programs that fall under a broad definition of remediation. These programs include remedial programs at its Sylvania campus and its state-sponsored Welfare to Work program, both of which described in this chapter.

College Success Skills Department, Sylvania Campus

Goals and Organization

The goal of the College Success Skills (CSS) Department is to facilitate retention, encourage student independence and responsibility, and foster student success. The program works with students whose placement test (ASSET) scores place them into developmental/remedial coursework. The CSS services and instruction are designed to help students achieve the skills and abilities required for success in the classroom, the community, and the world of work.

The CSS Department is organized as part of the Student Support Services Division. The division dean responsible for the division reports to the dean of student development. The department has a faculty department chair who assists with scheduling, curriculum, and budget decisions. The department includes lecture and self-paced classes, tutoring support, direct classroom/program support, and academic advising.

Coordination and Integration

The CSS Department works closely with other instructional and on-campus service departments. Linkages have been built with the writing and math departments to smooth student transition from remedial to college-level coursework. Faculty share expectations and teaching methodology in meetings and at in-service activities. A number of math faculty teach in both CSS and the Mathematics Department.

During this past year, CSS took a leadership role in a cooperative effort with all on-campus tutoring. Tutoring services in CSS, including the Ethnic Student Success Center, the English Skills Center, and the Math Center, teamed with other tutoring services at the Sylvania Campus to form the Sylvania Labs Council. The Sylvania Campus services include the English as a Non-Native Language Tutoring Center, the Writing Center, the Health Technology Writing Lab, and the Volunteer Literacy Tutor Center. The council developed a common referral form and a brochure describing each center's tutoring services. The form and brochure are intended to make it easier for faculty to refer students to appropriate tutoring to receive feedback about the help they have received.

Technical Learning Skills Specialists, funded by Carl Perkins federal appropriations, work under the supervision of the CSS to support career/technical programs. They provide academic and career advising; work closely with program faculty to problem solve and monitor student progress; research and refer students to appropriate college and community resources; and coordinate student workshops on various life skill topics, such as time management, study strategies, goal setting, interpersonal communication, career planning, and resume writing. Learning Skills Specialists at the Sylvania Campus directly support a variety of instructional programs, including Automotive, Civil and Mechanical Engineering, Software Engineering Technology, Electronic Engineering Technology, and Nursing.

Program and Placement

Most CSS students score at the remedial/precollege level on the ASSET placement test. Most of these students are high school graduates or have a GED equivalent. All students are required to have prerequisite skills that make success in subsequent coursework probable. Credit students are required to take an ASSET placement test before enrolling in writing and math courses. Students receiving remedial level scores (ranging from 23 to 41) must successfully complete remedial courses before entering college-level courses in reading, writing, or mathematics. In addition, many other career/technical and transfer courses at the college have reading, writing, or math prerequisites. If students have not successfully completed prerequisite courses and/or received appropriate prerequisite placement scores, their registration is automatically blocked.

The comprehensiveness of program offerings and support services and the variety of learning approaches help CSS students flourish. Gifted and caring faculty and staff are the glue that hold the program pieces together. Strong organizational support for the program, including adequate funding and staffing, numerous support services, small class size, recognition as an instructional department, and an effective assessment and placement plan, make this important work possible.

Because PCC students are usually with CSS for only one or two terms, they have little time to build long-term relationships. Nevertheless, throughout their tenure at PCC, many students return to a favorite CSS faculty member or advisor for counseling, support, or sometimes just to pay a visit. Individual students are not tracked when they leave the program, but composite information is collected about CSS students and their success in other courses at PCC.

Evaluation

For the past two years CSS has worked closely with PCC institutional research and developmental education programs on other campuses to design a research report which compiles information from the 1994-95, 1995-96, and 1996-97 school years. The major rationale for the evaluation plan is to measure institutional effectiveness and use the data to make program improvements. The data format includes college totals and individual campus breakdowns for the largest course in each of three curriculum areas. These courses, Reading 90, Writing 90, and Math 20, are the final classes taken in developmental education before students transition into college-level coursework.

Gifted and caring faculty and staff are the glue that hold the program pieces together. Strong organizational support for the program, including adequate funding and staffing, numerous support services, small class size, recognition as an instructional department, and an effective assessment and placement plan, make this important work possible.

The following 3-year CSS program outcome data were compiled:

- Rate of successful completion of students enrolled in developmental education courses. Math 20–69 percent; Writing 90–69 percent; Reading 90–63 percent
- Movement of Math 20 students to other math courses and their rate of successful completion in those courses: 60 percent success
- Movement of Writing 90 students to other writing courses and their rate of successful completion in those courses: 73 percent success
- Movement of Reading 90 students to other reading courses and their rate of successful completion in those courses: 71 percent success
- The rate of successful completion of other credit courses taken by students currently or previously enrolled in developmental education courses: lower division collegiate courses–68 percent success; professional/technical courses–65 percent success

With general and campus-specific information in hand, each campus developed further assessment tools and plans. For CSS on the Sylvania campus, for example, the findings raised two major questions: (1) Why did the success rate of Math 20 students, who went on to take Math 60, fall from 75 percent in 1994-95 to 60 percent in 1995/96? and (2) Why did so many students who were successful in developmental education classes fail to continue taking subsequent courses in the related discipline?

Such questions lead developmental faculty to review and, in some cases, modify courses to improve student success rates. For example, in

considering question one, the developmental math faculty concluded that the major factors in the declining success rate for Math 20 students continuing in Math 60 were a new curriculum and a new text used in Math 60. As a result, the Math 20 curriculum has been modified to provide a smoother transition into Math 60. More project and group work, story problem practice, writing, and increased use of the calculator have all been incorporated into the curriculum.

Costs

While costs for developmental education and the CSS program are of continuing concern, the State of Oregon does reimburse colleges for developmental education credits, and even for documented tutoring hours. Thus, almost all program activities in the developmental education area are reimbursed by the state at the same rate as other college credit courses. Tuition costs for CSS courses are the same as for other classes at the college–$36 per credit hour. Most CSS reading and writing classes are three credits ($108 tuition), and most CSS math classes are four credits ($144 tuition). Subject to federal regulations, students in these programs can receive financial aid to help defray their college expenses.

Steps to Success

The PCC Steps To Success program partners with Mt. Hood Community College to provide training and employment services to welfare recipients in Multnomah and Washington counties. The goal of the program is to empower welfare recipients to become employed in jobs that will allow them self-sufficiency and employment stability. This is achieved through a range of educational, counseling, job placement, and job retention services.

The program serves three geographic clusters within Multnomah and Washington counties. PCC administers services in North/Northeast Multnomah County, West Multnomah County, and Washington County, as well as a districtwide program for limited-English speakers. The program is a separate department within the division of the Open Campus under the dean of Adult and Continuing Education. Each Steps To Success cluster works with the Adult and Family Services (AFS) branches in its area to design services to meet participating students' needs.

Program Impact

The program has made a significant impact in the community by helping individuals leave welfare and become members of the work force, thereby reducing the tax burden to fund welfare assistance and increasing the taxable wages spent in the community. For example, in Multnomah and Washington counties from July 1996 through June 1997, 6,525 welfare recipients obtained employment, earning mean wages from $5.56 to $7.39 per hour. After eighteen months, approximately 89 percent had not return to welfare. This represents a $78.3 million savings in welfare payments and an addition of more than $75 million in taxable wages in the community.

Ninety-five percent of Steps to Success program students are single women with children. The average age of participants is 28. Student skill levels range from nonreaders through college-level reading skills. Approximately 20 percent of participants test below sixth-grade level, and another 40 percent test between sixth- and eighth-grade level. Approximately eight percent are nonnative speakers. The majority have limited work experience. Alcohol, drug abuse, and mental health issues are common. Many participants struggle with self-esteem and basic life management issues.

Program services are designed and redesigned as necessary to meet participants needs, and these needs may be increasing. As increasing numbers of welfare recipients obtain employment and leave welfare, people remaining on caseloads have more serious issues and barriers to employment. Program services include:

- Career and vocational assessment
- Adult basic education
- GED preparation and testing
- English as a Second Language instruction
- Vocational training
- Mental health and alcohol and drug counseling
- Learning disability assessment
- Work-site placements to gain skills and work habit
- Job development and job search assistance
- Assistance to retain a job through continued counseling and skill training.

Assessment

Program performance goals and service activities are developed each fiscal year and clearly stated in a plan that is submitted to the state department of Adult and Family Services. Both AFS and Steps to Success program staff evaluate the program against these goals throughout the year. Performance data are maintained through a computerized statewide database. Program sites also maintain performance data to record specific services provided and evaluate performance toward goals. The primary performance goals set by the state relate to four assessments: total participants served, total participants entering employment, total welfare caseload reduction, and total number of teens engaged in services. For fiscal year 1996-97, Steps to Success had the following performance:

Total participants served	8,172
Total entering employment	6,525
Total caseload reduction	2,472*
Percent of change in caseload	-26%
Total teen participation	791
Total receiving ABE/GED instruction	1,205
Total in a work site placement	1,200

**The number entering employment is greater than caseload reduction because many participants are still eligible to receive medical and/or childcare benefits when they first enter employment.*

Of the 1,205 students who enrolled in either ABE or GED, 518 or 43 percent successfully completed their program. Approximately 40 percent of these 1,205 students were enrolled in the GED program, and 75 percent of them were successful in passing the GED exam. Students who dropped out of the ABE part of the program did so for a variety of reasons. Some got jobs and discontinued their coursework, some left the Steps To Success Program completely, and some simply did not complete the course.

PCC's successful Steps To Success program has consistent, strong performance outcomes that can be traced to a number of factors:

- The program is a partnership of two community colleges, Adult and Family Services, public agencies, and other local community agencies, which allows for a leveraging of resources among organizations to provide a wide range of services for participants.
- Comprehensive support services are provided, including considerable individualized attention for each student; consistent follow-up and accountability requirements; mental health counseling and support groups; work-site placements in which the employer assigns a mentor to the trainee; continued contact with students after employment; innovative approaches to develop and modify services to meet special participants' needs; a family-centered support model that recognizes students as parents and encourages students' motivation to give their children more opportunities.
- The college's institutional commitment is a significant contributor to program success, particularly in the areas of systems support, staff development, and political support, which allow the program to operate to its fullest capacity.

Summary

Evaluation of remedial/developmental programs is a work in progress that should be assisted by the presence of sophisticated technology. Integrated student information systems allow colleges to track student progress from entry at any point of instruction through program completion or termination. In Oregon, a comprehensive statewide tracking system- OCCURS, the Oregon Community College Unified Reporting System colleges–is currently being implemented that will have links to the Oregon Employment System and to the Oregon University System. When OCCURS is fully in place, PCC will be able to track its developmental students through matriculation in senior colleges to the job mark[illegible]he attraction and incentive of gathering ever[illegible] information on students and their success, however, can only be justified by an equally strong desire to use this information to improve learning. Merely collecting accountability data is not enough. Students who need to acquire basic skills to get on with their education and their lives demand programs that produce results and are supported by documented research. PCC's College Success Skills and Steps to Success programs provide two successful, research-driven models for meeting students' developmental learning needs.

Chapter 11

Innovation and Achievement in Educational Development at Prince George's Community College

Robert I. Bickford, Craig A. Clagett, David P. James, and Margaret A. Taibi

Institutional Profile

Prince George's Community College (PGCC) is a comprehensive college offering certificate, transfer, and occupational associate degree programs and courses, as well as continuing education courses for professional certification, career entry, job upgrading, and personal enrichment. The college receives funding from the state of Maryland and Prince George's County. Over 90 percent of its students are residents of the county. The PGCC campus is located in Largo, Maryland, less than five minutes from the Capital Beltway surrounding Washington, D.C. Selected courses are also offered at extension locations, primarily at Andrews Air Force Base and at five county high schools. The college enrolls approximately 12,000 credit students each fall and spring semester. Over 34,000 different individuals enroll in one or more classes annually.

Prince George's County has a heterogeneous population exceeding 750,000. Largely due to extensive migration from the District of Columbia, the county's demography has changed dramatically over the past three decades. Once predominantly white and rural, the county is now majority African American and suburban. With America's largest African-American middle class, the county ranks high nationally in income and educational levels. Amid this suburban prosperity, however, the county also has neighborhoods characterized by urban poverty.

Prince George's Community College is committed to providing effective college-level instruction to all students, as well as appropriate counseling support and remediation services to enhance opportunities for student success. To ensure a foundation for college-level instruction, students seeking enrollment in credit courses for the first time are required to demonstrate, either through placement testing or completion of developmental coursework, basic academic skill proficiencies in reading, written expression, and mathematics. Instructional departments establish minimum entry standards for most credit courses. Students whose placement test scores fall below these standards are required to complete developmental courses. The basic skills tests that students are required to take are the Descriptive Test of Language Skills (DTLS) and the Descriptive Test of Math Skills (DTMS). These tests are untimed and administered by the college's testing center.

Basic Skills Deficiencies among Entering Students

Two-thirds of the students entering Prince George's Community College in fall 1997 and completing placement testing in all three basic skills areas needed remediation in at least one area. One-fifth needed developmental coursework in all three areas (see Table 11.1). The proportion of students needing remediation in at least one basic skill was one percentage point higher than in 1996, ending a downward trend from the high of 72 percent demonstrated by fall 1994 entrants (see Table 11.2). Typically, in the fall term, one of six students is enrolled in a developmental class.

Table 11.1: Remedial Needs of Fall 1997 Entrants

Total Students Tested in all 3 areas	**1,455**	**100%**
No remediation needed	460	32%
Remediation needed	995	68%
In one basic skill area	404	28%
In two basic skill areas	277	19%
In three basic skill areas	314	22%

Table 11.2: Percentage of Entering Students Needing Remediation, 1990 to 1997

Fall Term	Number of Students Tested in all 3 Basic Skills Areas	% Needing Remediation in at least 1 Area
1997	1,455	68%
1996	1,596	67%
1995	1,866	70%
1994	1,800	72%
1993	1,913	70%
1992	1,841	71%
1991	1,923	66%
1990	2,081	60%

As Table 11.3 indicates, mathematics is consistently the weakest skill area among entering students, the majority of whom require remediation in this area. From 1993 to 1997, the proportions of entering students needing developmental reading and English have ranged from one-third to two-fifths. The pattern of developmental education needs among recent high school students has been similar to that for all entering students.

The Educational Development Program

The Educational Development program at Prince George's Community College serves approximately 2,000 students each term and generates the equivalent of 18,000 credit hours annually. The program has 15 full-time faculty, 37 adjunct faculty, and 33 support staff, including learning laboratory program coordinators, computer specialists, and office workers. The program is directed by the dean of educational development, who is assisted by a departmental chair and five faculty program coordinators (four in developmental mathematics and one in language arts). The dean reports to the vice president for continuing education and evening programs. The developmental program is separate from the credit English and mathematics departments, which report to the vice president for instruction. Educational development faculty are recruited based on their experience in working with underprepared students, their commitment to meeting students' need, and their belief that all students can learn. The divisional philosophy further incorporates a commitment to collaborate with other campus offices to provide social and emotional support and academic assistance to students. The program is designed to be responsive to adults as well as recent high school graduates.

Distinguishing Features

The following distinguishing features characterize the Educational Development program at PGCC:

- **Multi-tiered structure.** Six developmental mathematics courses, two developmental reading courses, a fundamental language skills course, a developmental English composition course, and a college-level

Table 11.3: Percentage of New Students Needing Remediation, 1993 to 1997

	1993	1994	1995	1996	1997
Mathematics	57% (2,090)	65% (1,963)	61% (2,034)	57% (1,758)	57% (1,585)
Reading	34% (2,029)	32% (1,954)	31% (1,980)	30% (1,878)	32% (1,790)
English	33% (2,030)	35% (1,887)	35% (1,937)	36% (1,840)	40% (1,729)

Two-thirds of the students entering Prince George's Community College in fall 1997 and completing placement testing in all three basic skills areas needed remediation in at least one area.

learning skills course are offered. With the exception of the three-credit college learning skills course, for academic load and tuition purposes, all developmental courses are equivalent to four semester hours. Continuing Education Units (CEUs) are awarded for successful completion. Credit towards certificates or degrees is not awarded.

- **Integrated, three-pronged program.** The program's approach to student success includes: (1) formal classroom instruction; (2) extensive, mandatory laboratory assignments; and (3) strong advising and tutorial services, some delivered in partnership with other campus offices. The program places great emphasis on faculty-student interaction, mentoring, counseling, and advising. Instructional technology is used extensively and is viewed as a necessary tool to improve the efficiency and effectiveness of face-to-face interaction.
- **Placement test confirmation.** A second departmental diagnostic skills assessment is administered during the first week of classes. It assures that students are placed in appropriate developmental courses. Although this second test usually confirms the initial placements based on DTLS and DTMS testing, it enables some students to advance to higher-level developmental courses or introductory credit courses.
- **Required laboratory work.** Students complete a minimum of 25 hours of laboratory work in each developmental course. Faculty lab coordinators monitor this requirement through a computerized tracking system that documents student lab hours and use of instructional software. In fall 1997, students logged nearly 29,000 hours in the learning lab.
- **Pass-fail grading system.** Faculty use a modified pass-fail grading system with multiple levels of passing to assess student readiness for more advanced coursework. Student mastery of course material as demonstrated by proficiency tests allows quicker movement into higher-level developmental and credit classes.
- **Collaboration with credit faculty.** Close collaboration among credit faculty, developmental faculty, and student support services promotes a seamless transition from developmental to credit coursework. The shared commitment to this goal by the vice presidents for instruction, continuing education and evening programs, and student services ensures coordination across organizational units.
- **Continuous improvement.** A commitment to continuous improvement encourages further innovations to enhance student success. An example is the R3 Academy, a learning community model discussed later in this chapter.

Program Enhancements, Fiscal Years 1996 to 1998

As noted, the developmental studies program is a coordinated effort of formal classroom instruction, laboratory work, advising, and tutoring. All three components of the program were enhanced over the past three fiscal years, reflecting strong support from the board of trustees and the president who made the program a budget priority.

Formal Instruction. The Educational Development division took the following actions during the 1996-98 fiscal years to strengthen the formal instructional component of the program:

1. Improved the full-time to part-time faculty ratio by hiring five new full-time faculty, thus reducing the proportion of courses taught by part-time faculty from 64 to 52 percent.
2. Increased instructional time by moving administration of developmental mathematics exams to the college's Campus Assessment Center, where they are scheduled outside of class hours.
3. Appointed four developmental math coordinators from the teaching faculty to oversee developmental mathematics courses. These coordinators ensure that academic content, test materials, and student proficiencies meet divisional standards. Appointed one faculty member to similarly oversee developmental reading and English courses.

4. Appointed a language arts textbook review committee to ensure that reading and English materials (print, computer-based, and multimedia) emphasize integration of reading and writing skills, critical thinking, multicultural readings, study skills, and practice exercises.
5. Hired aides to provide classroom assistance to students enrolled in the introductory developmental and self-paced developmental mathematics courses.
6. Implemented EDUCO, a computerized mathematics course, as part of the grant-funded Minority Science Achievement Program sponsored by Clark University in Atlanta.
7. Offered upper-level developmental mathematics and reading courses online.
8. Implemented, on a pilot basis, the R³ Academy (Reasoning, Readiness, Real World), a two-semester, fast-track program for students who have tested into intermediate-level developmental mathematics and developmental reading or English. The Academy uses a learning community approach, developmental and credit instruction. A team of faculty, counselors, and advisors provide direct instruction, enrichment programs, mentoring, advising, and student advocacy. This innovative, integrated-content approach is designed to enhance the thinking skills and academic competencies necessary for college success. The curriculum is organized around the theme of community, and students are encouraged to see how learning skills and subject matter are interrelated. Academy classes and activities occur from 9 a.m. to 1 p.m., Monday through Friday. Students must register for the entire full-time, cluster-scheduled block of courses that include developmental math, college language skills (integrated reading and writing instruction), a college success/orientation course, and introduction to computer literacy. Students are organized into teams to complete group projects and make presentations to Academy faculty and students.

Learning Laboratory. PGCC took the following actions during fiscal years 1996 to 1998 to strengthen the laboratory component of the educational developmental program:

1. Implemented use of PLATO computerized courseware, which consists of hundreds of modules spanning a broad range of subject areas designed to meet the needs of young adult learners. "Fastrack" tests in English, reading, and mathematics place students in appropriate curricula. Each module is at a specific skill level, with tutorials, drills, and mastery tests, and faculty can track student progress through the PLATO management system.
2. Invested over $300,000 in instructional technology to upgrade the 105 computers in the learning laboratory and purchase software such as Skills Bank IV, Merit Word Problems, and other mathematics, English, and reading comprehension programs. Implemented a computerized data management system that allows faculty and lab technicians to monitor student lab use.
3. Hired two full-time and five part-time instructional program coordinators to support students using tutorial programs in the laboratory.
4. Hired one full-time and one part-time computer specialists for the learning lab.
5. Provided network access to developmental studies software from all campus computer labs.
6. Installed multicultural reading software, featuring units on the customs and economics of diverse cultures supplemented by questions that emphasize recall and vocabulary.
7. Installed a multilevel, critical thinking skills program that requires students to complete each level before advancing to the next. Topics include history, culture, music, science, and famous personalities; tests of vocabulary and reading comprehension follow each passage.

Advising and Tutoring Services. The college strengthened the advising and tutoring component of the Educational Development program through the following actions:

1. Developed a handbook for all developmental studies students emphasizing study skills, test-taking strategies, and exercises to increase student success.

2. Instituted mandatory orientation sessions for all developmental mathematics students to inform them of divisional and collegewide support services.
3. Paired student services counselors and developmental faculty teams to create interventions for developmental mathematics students encountering difficulties. One such solution is a program that integrates workshops and individual counseling with classroom activities.
4. Established a tutoring center exclusively for developmental mathematics students. The Developmental Studies Math Tutoring Center provides over 2,000 hours of tutoring each term.
5. Assigned a full-time faculty member to tutor developmental reading and English students.
6. Offered one-hour developmental mathematics workshops covering time management, note-taking, study skills, calculator use, math comprehension, memory aids, and math anxiety. Students receive two hours of lab credit for workshop attendance.
7. Developed an intensive mathematics review course in collaboration with the college's Continuing Education Division. Students scheduled to begin a developmental math course are given the opportunity to challenge their math placement by taking a retest during the last session of the review course. Depending on their test results, students may enter developmental mathematics at a higher level or be placed directly into college-level mathematics. Of the 113 students participating in fall 1997, 80 took the test upon completion of the review sessions. Twenty-eight students tested out of developmental mathematics and were able to enroll in college mathematics. Twenty-nine students were able to enroll in the highest-level developmental mathematics class. Thus, as a result of this intensive review and retesting option, 71 percent of the students advanced out of at least one developmental mathematics course.

Evaluation Design

PGCC's institutional research office conducted a longitudinal cohort analysis of student outcomes to evaluate student academic progress and develop the following typology of student outcomes:

1. **Award and transfer.** The percentage of degree-seeking students in an entering cohort who have earned a degree or certificate from the community college and transferred to a four-year college or university within the study period.
2. **Transfer/no award.** The percentage of degree-seeking students transferring to a senior institution without having earned an award from the community college.
3. **Award/no transfer.** The percentage of degree-seeking students earning a degree or certificate from the community college for whom there is no evidence of transfer.
4. **Sophomore status in good standing.** The percentage of degree-seeking students who have not graduated from the community college but who have earned at least 30 credits with a cumulative grade point average of 2.0 or above, and for whom there is no evidence of transfer. (Probably included in this category are a number of students who have transferred to independent and out-of-state colleges or universities).
5. **Achievers.** A summary measure of the preceding four categories.
6. **Persisters.** The percentage of degree-seeking students still enrolled at the community college (as of the last term of the study period) who do not fall into any of the above "achiever" categories.
7. **Nonachievers.** The percentage of degree-seeking students for whom there are no records of transfer and who exited in good standing without graduating or earning 30 credits. Although some of these students may have transferred to independent or out-of-state colleges before accumulating 30 credits, the true "dropouts" are included.

Inclusion of those who have achieved sophomore status in good standing with the more traditional achievement measures of graduation and transfer, reflected the judgment that completing the first year of college represents a significant educational achievement for many community college students. An estimated two-fifths of the students entering PGCC each fall are the first in their family to attend college. For them, the transition to college is a social and cultural

adjustment, as well as an academic transition. Two-thirds of the college's entrants come to PGCC lacking the basic skills of reading, writing, and mathematics necessary for college coursework. These students must complete one or more developmental courses without degree credit before fully pursuing their degree coursework. Half of the college's students are employed full-time and must balance their college studies with employment demands. In addition, most students are 25-years-old or older and may have additional family responsibilities. Three-fourths of PGCC's students attend part-time and one-third elect to "stop out" for one or more semesters.

Program Performance

In fall 1990, the institutional research office used the above typology to study the progress of entering students and establish achievement baselines. Of the 2,643 first-time entrants, 256 had short-term, nondegree goals and were excluded from analysis. Longitudinal study revealed that after four years, 665 (28 percent) of the degree seeking students had graduated, transferred, or attained sophomore status in good standing. This achievement rate was found to vary depending on the student's level of basic skills at entry.

Earlier studies had found that students needing remediation in mathematics and at least one other area–reading or English composition or both–were most "at risk" of failure. The fall 1990 cohort analysis, documented in Table 11.4, confirmed this finding. Only 11 percent of the students identified as needing developmental courses in mathematics and at least one other area were classified as achievers. In contrast, students with no developmental needs achieved at a rate of 45 percent. When the study accounted for persisters enrolled at PGCC in the last term of the study period, half of the students needing no developmental courses succeeded, compared to only 20 percent of the developmental group. Among full-time students, 56 percent of the nondevelopmental group–compared to 17 percent of the developmental math plus group–graduated, transferred, or attained sophomore status within four years.

Achievement levels varied by the number of skill areas needing remediation. Twenty-eight percent of the students needing developmental courses in only one basic skill graduated, transferred, or attained sophomore status in good standing within four years of entry to PGCC.

Achievement rates dropped to 17 percent for those needing remediation in two areas, and 11 percent for those needing remediation in all three areas of mathematics, reading, and composition

Table 11.4: Student Outcomes after Four Years By Developmental Need (Outcomes from Spring 1994 of Students Entering Fall 1990)

	% Students Needing No Developmental Studies Courses		% Students Needing Developmental Math & Reading or English	
4-Year Outcomes	**Total**	**Full-time**	**Total**	**Full-time**
Award & transfer	4%	7%	1%	1%
Transfer, no award	17%	24%	2%	4%
Award, no transfer	5%	6%	1%	2
Sophomore w/2.0+ GPA	18%	19%	7%	9%
Achievers	45%	56%	11%	17%
Still enrolled	5%	4%	9%	7%
Nonachievers	50%	40%	80%	76%
Total	**861**	**536**	**628**	**281**

(See Table 11.5). These data clearly indicate that the degree of remediation needed upon entry influences credit accumulation and academic achievement.

Table 11.5 also shows developmental studies student achievement measured in terms of student progress through recommended developmental courses. One-fifth of the students initially identified by testing as needing remediation did not take developmental courses, due to early attrition, avoidance, waivers granted by counselors, or retesting. These students attained an achievement rate of 21 percent, compared to 45 percent for students not needing remediation. Students who took developmental courses but failed to pass them had a 4 percent achievement rate. Students passing at least one developmental course, but not completing required remediation in any skill area, had an 11 percent achievement rate. Notably, after 4 years, only 16 percent of the fall 1990 cohort of students needing remediation had completed all recommended developmental work. Of those who did so, however, 46 percent succeeded in graduating, transferring, or attaining sophomore status, the same rate as students who did not need remediation. Thus, it appears that the developmental studies program works for those who completed it, but getting more students through the program remains a challenge.

Support Programs for Developmental Students

As noted, a key attribute of the college's developmental education program is collaboration with support services located across campus. The college has a number of such services, including two that specifically target underprepared students, a minority student retention program and a TRIO-funded Student Support Services program. Institutional research studies have found that participants in these support programs have higher retention rates and were more likely to graduate or transfer than their counterparts who do not receive this program support. While methodological limitations prohibit definitive conclusions, the studies

Table 11.5: First-Time Student Achievement (Graduating, Transferring, or Attaining Sophomore Standing) after Four Years and Developmental Status

Fall 1990 First-Time Student Cohort	Number of Students	Percentage of Cohort	Percent Achievers
BASIC SKILLS ASSESSMENT (n=students tested in all 3 areas)			
No developmental courses needed	861	42%	45%
Developmental courses needed	1,170	58%	18%
In one area	390	19%	28%
In two areas	380	19%	17%
In three areas	400	20%	11%
DEVELOPMENTAL PROGRESS (n=students identified as needing developmental			
No developmental courses taken	262	22%	21%
Developmental courses taken/none passed	214	18%	4%
Course(s) passed/no area completed	198	17%	11%
Some, but not all areas completed	315	27%	15%
All developmental work completed	181	16%	46%

suggest that student support programs involving sustained personal attention and multiple services can enhance achievement of developmental students.

Improved African-American Student Achievement

While the need for developmental education cuts across all demographic groups at the college, the incidence of need is greatest among the college's majority African-American population. Four out of five African Americans enrolling at PGCC test as needing developmental education. Past studies documented an increasing gap between African-American and white student achievement. To examine more recent trends in student progress, four-year achievement rates were calculated for three first-time cohorts (students entering in fall 1990, 1991, and 1992). Table 11.6 displays these data and shows the achievement rates of each cohort hovering consistently around 28 percent. Differences in performance by race and gender were found, however. The percentages of African-American men and women who had graduated, transferred, or attained sophomore status in four years *increased* across the three cohorts. In contrast, the percentages of white men and women classified as achievers decreased over the 1990-92 cohorts.

Table 11.6: Achievement Rates After Four Years–Percentage of Students Graduating, Transferring, or Achieving Sophomore Status in Good Standing

Cohort Subgroup	1990 Cohort	1991 Cohort	1992 Cohort
African-American Males	13% (N=465)	15% (N=459)	17% (N=526)
African-American Females	19% (N=720)	22% (N=698)	26% (N=686)
White Males	39% (N=400)	33% (N=302)	34% (N=295)
White Females	42% (N=499)	40% (N=396)	38% (N=388)
Total Cohort	**28% (N=2,394)**	**27% (N=2,154)**	**29% (N=2,182)**

The research office plans to continue its studies of the progress and achievement of developmental students. The cohort analyses will be extended to six years, and additional support services will be evaluated. The R³ Academy will receive special analysis, as the college must decide whether to expand what is now a pilot program. Early results were encouraging, with 37 of the 38 participants returning in spring 1998, for a 97 percent retention rate.

Developmental Education Cost Data

The average cost per FTE student of developmental instruction at PGCC has always been below the collegewide mean cost for credit courses. The college has conducted an annual cost analysis by discipline area since the mid-1970s. Growth in the developmental studies division has been relatively recent, so the area has fewer full-time faculty at top salary ranks and, due to cost containment initiatives, a higher proportion of part-time, adjunct faculty. The collegewide cost per FTE for credit courses in 1997 fiscal year was $5,001. The comparable costs for developmental English, mathematics, and reading were $4,234, $4,385, and $4,985, respectively.

Summary

Among the major challenges facing PGCC and many other community colleges is the large number of entering students who are underprepared for college study. While students may be "at-risk" for a number of reasons including family and employment circumstances, deficiencies in the basic skills of reading, composition, and mathematics limit their academic progress. This chapter outlines the breadth of basic skill deficiency among PGCC students, described the developmental studies program in detail, and examined its impact on student achievement. Major findings can be summarized as follows:

- Two of every three entering fall students need remediation in at least one basic skill area.
- Mathematics is the area of greatest deficiency, with the majority of students needing remediation.
- Students entering PGCC with college-level skills are two-and-one-half times more likely to graduate, transfer, or attain

sophomore status in good standing than students needing developmental education.
- Students identified as needing remediation who complete all recommended developmental classes achieve at the same rate as students not needing remediation.
- Students participating in support services that integrate mentoring and instructional support persist and achieve at higher rates than nonparticipants.

Like many open-admissions colleges, PGCC will continue to enroll a large proportion of underprepared students–but it is not becoming a remedial education institution. In a typical fall term, 16 percent of PGCC students enroll in a developmental education classes, and developmental education accounts for 12 percent of total college hours. The real significance of developmental education is the recognition of basic skills deficiencies and the hurdles these deficiencies place in the way of student progress. The finding from the fall 1990 cohort analysis–that students completing all necessary remediation achieved at the same level as students not needing developmental courses–is encouraging. Similarly, findings that support programs targeting developmental students enhance student achievement suggest that college actions can positively influence student outcomes. However, only 16 percent of the fall 1990 students needing remediation completed their developmental coursework, and budgetary concerns constrain support services expansion.

The finding from the fall 1990 cohort analysis–that students completing all necessary remediation achieved at the same level as students not needing developmental courses–is encouraging.

The Educational Development program is committed to improving developmental student success. It will continue to implement instructional innovations, engage students in learning, and advance critical thinking skills. The division seeks further collaborations with other campus offices and welcomes ideas from other institutions that have succeeded in advancing the academic progress of underprepared students.

Chapter 12

Developmental Education at Sandhills Community College: A Community of Support

Susanne Adams and Kristie Huneycutt

Institutional Profile

Sandhills Community College (SCC), located in south-central North Carolina, was established in 1963. A member of the system of 58 community colleges chartered by the State of North Carolina, the college's service area is its home county of Moore and adjacent Hoke County. Sandhills' students come primarily from the two counties (62 percent), with approximately 37 percent residing in one of the nine counties contiguous to Moore and Hoke. Less than one percent of the student body comes from out of state.

The demographic characteristics of SCC students are typical of North Carolina community colleges. Sixty-four percent of the students are female, and 31 percent are ethnic minorities. The median age is 26.5 years. Many retirees enroll as special students, taking only one course and not pursuing a degree. Unlike many other NC System institutions, however, the percentage of full-time students at SCC exceeds the community college system average by a considerable margin–60 percent of SCC students are enrolled on a full-time basis, compared to 42 percent average full-time enrollments for the system.

Sandhills has consistently served a higher percentage of its service-area population than the NC Community College System average. In 1996-97, the system attracted 14.2 percent of the adult population, while Sandhills attracted 19.4 percent. In this same year, the college enrolled 3,500 students, with 26 percent qualifying as low-income, 85 percent as first-generation college students, and 47 percent receiving some form of financial aid. Moreover, 36 percent were college transfer, 53 percent technical, 9 percent vocational, and 2 percent general education program students.

Sandhills ranks second among North Carolina Community Colleges in the percentage of college transfer students. College transfer programs include Associates in Arts, Fine Arts, and Science. Associate degree technical programs include six engineering technologies, five allied health and two nursing programs, six business programs, and programs in automotive service technology, human services technology, landscape gardening, and hotel and restaurant management. Vocational programs leading to diplomas or certificates include automotive body and mechanics, practical nursing, cosmetology, two electronics programs, and surgical technology.

The college's two major service areas differ dramatically in ethnic, economic, and educational characteristics. Moore County is 80 percent Caucasian, 18 percent African American, and less than 1 percent Native American. The poverty rate in Moore County is 11.1 percent with 74 percent of the adults having a high school diploma. In stark contrast, Hoke County is 42 percent Caucasian, 43 percent African American, and 14 percent Native American. The poverty rate in Hoke County is 21.1 percent with only 56 percent of the adults holding a high school diploma. Thus, while Moore County is near the state median in most educational and economic measures, Hoke County citizens are among the poorest in both categories. 1990 census data reveal that Hoke ranks last among North Carolina counties in per capita income at $9,091.

The Remedial Program

Throughout the country, a large number of students are arriving on the doorsteps of community colleges eager to learn but unprepared to do college-level work. Indeed, more than 60 percent of students entering SCC need remediation in mathematics, writing, or reading, with over 50 percent needing developmental work in more than one area. In some cases, these students are recent high school graduates whose diplomas tell more about their

age and attendance than about their classroom achievements. Others are G.E.D. recipients trying to move on in education, after having "dropped out" at an earlier point in their lives. Still others are returning adults–coming back to school after years, or even decades, away from the classroom. Whatever their origins, these students have come to the community college with a common problem: they need the education that will allow them to become productive, successful participants in the world of the new century. In many cases, they have come to the college looking for a "last chance." Sandhills believes that helping these students succeed is at the very core of its institutional mission.

In 1995, SCC initiated a program of ongoing self-evaluation for every part of its operations. This analysis assesses institutional effectiveness throughout the college and defines performance against measurable objectives, outlined in an SCC document titled *Benchmarks of Excellence*. The purpose, mission, and goals of developmental education at Sandhills are a part of this important document. It notes that developmental education, referred to at SCC as Academic Support Services, "provides pre-college educational opportunities, counseling, and support programs that enhance student retention and success." It further details how developmental education at Sandhills is linked intrinsically to the overall college mission:

> The Developmental Education program is the open door for admission to Sandhills Community College. The college is committed to enrolling students at their entering level of achievement and helping them to be eventually successful in a credit program of their choice. The program aims to promote goal setting, self-worth, and positive attitudes so that developmental students gain personal satisfaction and become contributing members of society.

To achieve this mission, the developmental program: 1) assesses the student in an accurate and timely fashion, 2) initiates career or program counseling for each student, 3) develops an appropriate advising plan, 4) provides a tailored program for student instruction, 5) accommodates learning disabilities, 6) supplies appropriate tutoring support, 7) provides support to developmental and other faculty, and 8) annually evaluates the success of individual students, cohorts, and the entire program.

In 1995, SCC reviewed its entire developmental program and, as a result, redirected its campus resources to better accommodate the needs of developmental students. A new department, Academic Support Services, was founded to unite developmental education services into a single department rather than dispersing them throughout the college in separate departments, as they were formerly organized. This organizational change reinforces Sandhills' commitment to developmental students by placing most of services for remedial student's within a single department. Figure 12.1 depicts the organizational structure of the new Academic Support Services department at Sandhills.

At Sandhills, a "developmental student" is one who takes the ASSET Placement Test (ACT) and scores 41 or below in English, 42 or below in reading, and below the entry-level score for the math course required by his/her curriculum. Presently, SCC offers two developmental English courses, one developmental speech course, three developmental math courses, two developmental reading courses, and one orientation and study skills course. The speech course pairs with the lowest-level English course, and the study skills class is required for all students who place in developmental courses. Typically, developmental classes are limited to 24 students.

The 1995-96 developmental education study found that approximately 43 percent of the students in the program were recent high school graduates, whereas 57 percent had been out of school for at least two years. The average age of a developmental student was slightly lower than the 25 years of the general college population. Fifty-two percent of the students enroll in two or more developmental courses, with 22 percent in English only, 24 percent in math only, and 2 percent in reading only. In addition, over one-half of the developmental students are "fully developmental," taking 12 or more credits of developmental courses, for at least one semester. This indicates the need for strong advising, flexible scheduling, and strong support systems.

After taking the ASSET placement test, SCC students must attend a general orientation session. At this large group session, all students are introduced to the college and its counseling facilities. Students are divided into smaller groups according to program and ability. Regardless of program, students who test into two out of three of the lowest-level developmental courses are

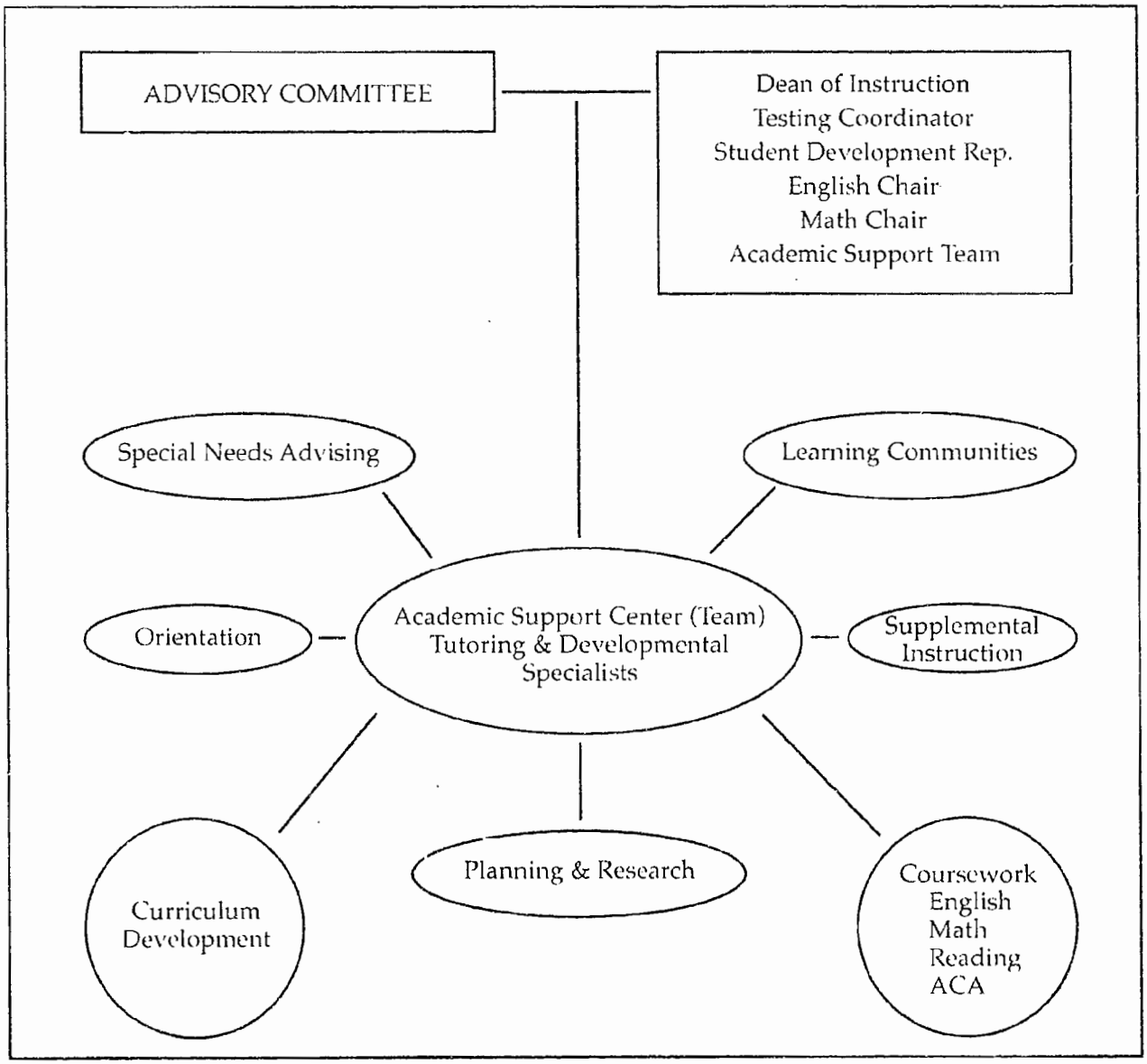
A new department, Academic Support Services, was founded to unite developmental education services into a single department rather than dispersing them throughout the college in separate departments, as they were formerly organized.

coded "special needs." These students meet with a developmental specialist who carefully explains test scores and their impact on course placement.

Developmental courses are mandatory. For instance, a student who places into developmental English 090/090A, Composition Strategies, must enroll in the course. Students must pass the course and the departmental exam with a "C" or better before moving on to the college-level English course. Students may, however, opt to retest or challenge the course by taking "credit by exam" if they feel the ASSET score does not indicate their true ability. Fewer than one percent of students choose this option.

Developmental courses carry institutional credit only. Grades in these courses comprise a separate GPA that is used to determine financial aid status and to identify and track students on

Figure 12.1: Academic Support Services



academic probation or suspension (GPA lower than 2.0). Credits do not count towards graduation. In addition, students who place into the lowest developmental English and reading courses must take developmental corequisites and are restricted in their choices of college credit courses until their remediation is complete. Both the college catalog and the course planning sheets list these course restrictions. Course placement is generally adequately monitored by the advisor and the registration procedure; however, some students do ignore prerequisites. The 1995-96 developmental study found that students who ignore prerequisites have little chance of success in college credit courses. In mathematics, for example, the 1995-96 study documented a 100 percent failure rate among students who enrolled in courses for which they did not meet prerequisites.

Important Program Features

The most important features of the developmental education program revolve around a theme of support: administrative support for the department and faculty members; academic support from dedicated, well-qualified faculty, and trained tutors; a comprehensive curriculum that stresses skills for success; and social support through an innovative program called learning communities.

Departmental structure. The departmental structure of developmental education at SCC is unique. The Academic Support Services department is led by a director and a team of instructors who are "developmental specialists." An advisory committee consisting of the dean of instruction, testing coordinator, student development representative, English chair, and math chair informally assist in decision making. The department houses support for developmental students including Special Needs Advising, Learning Communities, peer tutoring, and all supplemental instruction for SCC students. It also houses curriculum development for college course work in English, math, reading, and student success skills. Finally, the department conducts ongoing planning and research for developmental education and student retention.

Faculty and support staff. Developmental faculty members are enthusiastic, dedicated, and most importantly, well trained. Three of the six full-time faculty have received training at the Kellogg Institute through the National Center for Developmental Education. These are not faculty who teach developmental classes because they lost in a lottery of course assignments; these are faculty who have dedicated their teaching careers to assisting underprepared students. Students benefit from instructors who view student development holistically and who are familiar with and can provide access to valuable campus resources. In addition, SCC has one of the highest ratios of full-time to part-time instructors in the North Carolina Community College System. In fall 1997, full-time faculty taught more than 50 percent of the developmental English courses, more than 82 percent of the developmental math courses, and 71 percent of the developmental reading courses.

In addition to well-qualified full-time faculty members, the college has highly qualified adjunct faculty who are strongly committed to developmental student success. In fact, in fall 1997, 100 percent of part-time faculty had master's degrees in their instructional areas and an average of 20 years teaching experience, generally in developmental education or learning disabilities. Tutors and both peer and community volunteers constitute a vital component of the developmental studies program. In 1995-96, almost 90 percent of all tutoring requests came from students enrolled in developmental courses. Of those who used the tutoring program, 96 percent reported satisfaction with the service. The developmental program also uses supplemental instruction. Instructors work in teams in courses with high attrition rates, serving as tutors and, in some cases, peer assistants to improve retention. Much of the success of SCC's developmental program is due to the high priority given to hiring quality full-time and part-time instructors, as well as committed tutors.

Administration. The administration respects the importance of developmental education on the campus and in the community. With 60 percent of SCC students needing developmental education, the administration is committed to hiring knowledgeable full-time and part-time instructors, providing a director of Academic Support to coordinate the program, and securing appropriate financial resources for the department.

Learning communities. Serving about 36 percent of developmental students, learning communities are an important and innovative

part of the developmental program. A typical learning community consists of 20 to 25 students and three to four instructors/counselors who teach three or four courses from 8:00 a.m. to 1:00 p.m. These courses usually focus on a central theme, stress course integration, include college credit courses, provide social and cultural development, and may allow individuals to advance into the next course level. As the students move through a daily schedule of courses together, they develop study groups and social bonds that increase retention, persistence, and academic success. Through integrated curriculum and extracurricular activities, students and instructors alike form learning partnerships that extend well beyond the classroom and course disciplines.

Special needs advising. This component of the developmental program matches highly trained advisors with high-risk students. Any student who needs two or more developmental courses is assigned an advisor who is a member of the team of developmental specialists. These advisors work with advisees until the required developmental courses are completed. Typically, advisors will have their advisees in at least one class and will maintain close contact with them and their other instructors.

Coursework. In addition to basic English, reading, and math, the developmental education curriculum includes several innovative courses designed to ensure student success. One of these courses is an oral grammar course that is required for students who place into the lowest level of English. This course, Speaking English Well, is designed as a corequisite to a sentence and paragraph writing course and includes pronunciation, articulation, and conversational speech skills. Another required course is Success and Study Skills, an orientation course that includes such skills as listening, memory, and test taking. The course stresses the importance of developing a positive attitude, using campus resources, and dealing effectively with instructors. Finally, students who place into the highest-level developmental English course are required to use word processing. Many developmental students have had limited access to computers, and often the first weeks of class are spent focusing on how to use the mouse or save and store information on a disk. Since all of the freshman composition courses at SCC are taught in computer labs, this early exposure to word processing helps students feel more confidant when they are later asked to compose essays at the computer.

Evaluation Design

The ongoing self-evaluation noted earlier is the basis for evaluation. Strategies for improvement are developed following this analysis. Each year the college holds a "quality conference" during which it reviews its performance against benchmarks. At this conference college leaders identify institutional shortcomings, and the appropriate departments develop strategies to overcome those shortcomings. These strategies may include changes in policy, realignment of resources, or development of new programs to meet specific objectives.

The director of Academic Support Services is responsible for the evaluation of the developmental studies department. Specifically, this evaluation examines entrance testing results (ASSET), special needs advising patterns, persistence rates, completion rates coupled with success in subsequent nondevelopmental courses, services provided to students with learning disabilities, GPAs of students in ACA 115–Success and Study Skills, which is required for all developmental students, and graduation rates for students who begin in developmental courses. Recently, the college's *Benchmarks of Excellence* has included separate benchmarks for students enrolled in learning communities. Because these constitute "fully developmental" students, they represent a group that traditionally have been the most difficult to pass and retain. For this group, therefore, student satisfaction with the learning community experience is evaluated, in addition to retention, achievement, and persistence rates. In addition, learning community students are being followed in a longitudinal study; at present, outcomes data is limited since the program was newly piloted in spring 1997 and fully launched in fall 1997.

These are not faculty who teach developmental classes because they lost in a lottery of course assignments; these are faculty who have dedicated their teaching careers to assisting underprepared students.

Other evaluation measures contribute to the ongoing review of Academic Support Services. Using separate guidelines in *Benchmarks of Excellence*, all academic advising and tutoring support services are evaluated. In addition, student evaluations of faculty are conducted twice a year and department chair evaluations are done annually. Learning community instructors meet weekly to discuss program needs. Finally, the full Academic Support Services department meets at least twice a semester to monitor its progress.

Table 12.2: Developmental Studies Benchmarks and Outcomes, 1995-96 & 1996-97

Benchmark	Status 1995-96	Status 1996-97
95% of entering students who should take the ASSET test will do so.	85%	100%
100% of students labeled high risk will receive Special Needs Advising.	N/A	100%
80% of special needs advisors will teach their advisees in at least one course.	N/A	82%
100% of special needs advisors will undergo special advising training.	N/A	100%
Persistence rates for developmental students who progress to the next developmental course will be at least 60% in English and reading.	English=49% Reading=29%	English=76% Reading=49%
Persistence in developmental math equals 60% movement to next appropriate course within academic year.	N/A	54.5%
50% of students successfully completing developmental course work will progress into appropriate college credit course and earn a grade of C or better.	English=50% Reading=77%	English=63.5% Reading=70%
100% of documented learning disabled students will receive special advising and counseling.	100%	100%
60% of ACA 115 students will continue to the next semester's developmental sequence and maintain a GPA of 2.0 or better.	GPA 1.96; persistence 56.5%	GPA 2.96; persistence 56%
35% of Sandhills graduates will be former developmental students.	30%	37%
80% of students enrolled in a learning community will report satisfaction with the community learning experience.	N/A	93% spring pilot, 85% summer pilot, 87% fall
75% of students enrolled in a learning community will be retained.	N/A	100% spring pilot, 85% summer pilot, 87% fall
75% of students enrolled in a learning community will complete their first developmental courses.	N/A	92% spring pilot, 73% summer pilot, 71% fall
70% of students enrolled in a learning community will persist to the next appropriate developmental or curriculum course.	N/A	86% spring pilot, 88% summer pilot, 80% fall

Program Performance

An overview of departmental progress is available by reviewing the benchmarks. It is interesting to note changes in outcome data from 1995-96 to 1996-97, when the college established the Academic Support Services departmental structure, as displayed in Table 12.2. Many departmental benchmarks have been met, and consistent progress has been made toward reaching the others. Moreover, the initial evaluation of learning communities is encouraging in that it reflects a difference between students who take stand-alone developmental courses and those who participate in learning communities. For instance, the average persistence rate (the percentage of students who enroll in subsequent terms) for developmental students in 1996-97 was 60 percent. The average persistence rate for students within a learning community was 85 percent. Both of these figures are higher than the average college persistence rate of 56 percent. Retention is also higher for developmental students (88 percent) than for the general college population (82 percent).

Cost Data

The need to remedy the acute problem of undereducation that plagues North Carolina citizens has brought considerable pressure on the human and fiscal resources of those institutions charged with adult education. This underprepared population's need for remediation forces the college to spend a significant portion of its budget on basic, precollege skills training. For example, in fall 1996, 26 percent of all English courses and 47 percent of all math courses were developmental. By fall 1997 the proportions of developmental studies courses at SCC had risen to 49 percent of all English courses and 53 percent of all math courses.

During the fall quarter 1996, the college's total credit enrollment generated 417,959 contact hours of instruction (2,374 FTE). Developmental courses accounted for 68,838 contact hours (391 FTE). Thus, developmental instruction provided 16.5 percent of the total college FTE during this fall quarter. Table 12.3 displays the proportion of developmental courses in the major academic areas as well as a break-down of sections taught by full-time and part-time developmental instructors for Fall 1996.

At most community colleges, including Sandhills, the cost of instruction is directly related to the cost of the instructor. Sections taught by part-time instructors cost the college far less than those taught by full-time instructors. In both English and math, the percentage of developmental classes taught by part-time instructors exceeds the percentage of nondevelopmental sections taught by part-time instructors. Table 12.4 illustrates this cost differential.

Applying these data to the actual course schedule for fall 1996 produces the cost comparison for developmental versus nondevelopmental courses outlined in Table 12.5. Although SCC has a high percentage of full-time developmental instructors who deliver the majority of its courses, the college employs a greater percentage of full-time faculty in college

Table 12.3: Fall 1996 Developmental Education Data

Subject	Total Contact Hours	Percentage Developmental	Number of Developmental Sections	Full-Time Instructor Sections	Part-Time Instructor Sections
Math	31,438	47%	18	13	5
English	17,930	26%	17	11	6
Reading	16,610	23%	14	8	6
Academic	2,860	4%	14	13	1
Totals	68,838	100%	63	45	18

credit programs than in the developmental studies area. With a higher percentage of part-time faculty teaching in developmental studies, these courses cost less to offer.

Summary

Academic Support Services at Sandhills Community College is committed to providing a quality program that integrates a system of support and precollege credit courses. Through its unique departmental structure, Academic Support Services houses special needs advising, tutoring, supplemental instruction, and learning communities, and all are staffed by developmental education professionals. By having the courage to critically evaluate all aspects of the program and to use that information and innovative teaching techniques to constantly revise and upgrade its services, Sandhills meets the challenge of educating the least-prepared students in a cost-effective manner.

Table 12.4: Part-Time, Full-Time Faculty and Costs of Developmental Courses, Fall 1996

Subject	Developmental Sections Taught by Part-Time Faculty	Nondevelopmental Sections Taught by Part-Time Faculty	Mean Part-Time Faculty Cost per Section	Mean Full-Time Faculty Cost per Section	Cost Differential
Math	27.7%	11.7%	$1,520	$3,536	$2,016
English	35.3%	15.6%	$1,520	$3,744	$2,224
Reading	42.9%	N/A	$1,520	$3,848	$2,328

Table 12.5: Cost Comparison Developmental and Nondevelopmental Courses, Fall 1996

Developmental Courses				
	Part-time cost	Full-time cost	Total cost	Cost/section
Math	$7,600	$45,968	$53,568	$2,978
English	$9,120	$41,184	$50,304	$2,959
Reading	$9,120	$30,784	$39,904	$2,850
Nondevelopmental Courses				
Math	$3,040	$53,040	$56,080	$3,299
English	$7,600	$101,088	$108,688	$3,178
Reading	None offered	N/A	N/A	N/A

Chapter 13

SANTA FE COMMUNITY COLLEGE: COLLEGE PREPARATORY PROGRAM

Lawrence W. Tyree and Pat Smittle

Institutional Profile

Santa Fe Community College (SFCC), located in Gainesville, Florida, is a comprehensive postsecondary institution serving Alachua and Bradford counties in north-central Florida. The college was established by the Florida Legislature in 1965 to provide access to quality higher education; it currently serves approximately 12,600 credit students and 20,000 noncredit students annually.

Educational offerings at SFCC consist primarily of the Associate of Arts (A.A.), Associate of Science (A.S.), and Certificate programs. More A.A. graduates attend the University of Florida than any other transfer institution. The college's A.S. and Certificate programs in the Workforce Development Division prepare students for direct entry into the work force. About 64 percent of all students are enrolled in the A.A. transfer degree program; 36 percent are in Workforce Development programs. The college has an open-door admission policy that provides access to all high school graduates, regardless of their academic preparation. SFCC, therefore, attracts many underprepared students, who enroll in College Preparatory (remedial) courses to develop basic skills needed for college-level courses and the workplace.

SFCC's students are 50 percent full-time, 54 percent female, and 18 percent nonwhite, with 65 percent of all students in the 15 to 24 age group. According to the Title IV applications received by the Financial Aid Office in 1995-96, approximately 44 percent of all students were from low-income families.

The College Preparatory Program

The SFCC College Preparatory Program facilitates a critical component of the college's mission–providing students access to quality postsecondary education while maintaining high academic standards. Although the college has demonstrated a commitment to underprepared students since it was established in 1965, the Florida Legislature strengthened this commitment in 1985 by enacting statutes requiring mandatory assessment and placement (State of Florida, 1986). Additionally, this legislation substituted the term "college preparatory" for "remedial" or "developmental," terms that may be interchanged throughout this chapter.

Entry placement data for fall 1997 indicate that 56 percent of SFCC's first-time college students needed remediation in at least one basic skills area. Because it addresses this need for remediation, the College Preparatory Program is an integral part of the college and an important service to the community.

Organization and Staff

The College Preparatory Program is the major component of the Academic Resources and Assessment Department. It provides comprehensive developmental education activities that include assessment, remediation, academic support, academic advisement, and limited career counseling. The program is within the Division of Student Affairs and Workforce Development, and is also part of the Academic Affairs division. This working arrangement with involvement from both divisions of the college is consistent with the recommendations of Roueche and Roueche (1993), whose 1992 national study of developmental education found that interfacing with subsequent courses is one of the common elements of successful developmental programs.

In actuality, because of its comprehensive approach to addressing needs of underprepared students, the SFCC program is a hybrid between academic programs and student services. Boylan, Bonham, and Bliss (1994) contend that "the more comprehensive the services of a developmental program, the greater likelihood of promoting student success." They argue that a comprehensive developmental education program should include remedial courses,

tutoring, counseling, and academic advisement. The SFCC program includes all of these components, and the department's mission statement and goals illustrate the comprehensive nature of the program:

> The Department of Academic Resources and Assessment supports the open-door admission policy and promotes high academic standards by providing instruction, services, and assessment to a diverse student population. The college and vocational preparatory and specialized college-level curricula focuses on skills, knowledge, and work habits that students with varied backgrounds, abilities, and learning styles need to access and advance in careers, further academic studies, and lifelong learning. Faculty and staff are committed to providing an educational environment, enriched through continuous evaluation and innovative revision, that promotes students' intellectual and personal growth and encourages them to set and achieve academic, career, and personal goals. The following are the goals of the Department of Academic Resources and Assessment.

Goal 1 - Access:
To preserve and promote the college's open door policy while maintaining high academic standards by providing assessment services, preparatory instructional services, and adult education.

Goal 2 - Curricula:
To design, implement, review, modify, and/or eliminate college/vocational preparatory and specialized course and lab curricula that prepare students for and lend support to the Associate of Arts degree, Associate of Science degree, Certificate program, and Workforce Development projects.

Goal 3 - Learning/Teaching:
To promote learning of essential academic skills and work habits that prepare students to enter and succeed in college and the workplace while helping them set and attain academic, career, and personal goals.

Goal 4 - Professional Development:
To encourage and provide on-going professional development for faculty and staff by fostering professionalism and scholarship and by updating technical skills.

Goal 5 - Service:
To provide service to the college by participation in departmental and collegewide committees and to the larger community by involvement in various activities.

Goal 6 - Stewardship:
To practice good stewardship by efficient management of the departmental planning and assessment process, budget, facilities, and external grants.

Goal 7 - Workforce Preparation:
To promote economic opportunity and workforce preparation and development by working cooperatively with college workforce preparation initiatives.

The department of Academic Resource and Assessment provides a centralized organizational structure for all remedial activities for the Prep II Mathematics (Elementary Algebra) course, which the Mathematics Department teaches. This centralized structure places remedial efforts in a single department. In their recent national study, Boylan, Bliss, and Bonham (1997) found such centralization to be an identifying characteristic of outstanding developmental education programs. A designated administrator, staff, budget, space, and faculty hired for the specific purpose of teaching underprepared students characterize this structure.

The department offers remedial courses and labs in reading, English, mathematics (arithmetic), and English-As-A-Second-Language (ESL); college-level support labs, including reading, writing, mathematics, ESL, and CLAST (the State rising junior test) Labs; and academic assessment. Faculty coordinators, who also teach and supervise adjunct faculty in each area, coordinate these activities. The director oversees curricular activities, staff, budget, and facilities. The administrative unit and most of the labs and faculty offices are centrally located in the library building; however, additional space on campus is used because the program has outgrown its original facilities.

The cost-effective staffing model consists of full-time and part-time instructors and staff. Adjunct instructors are selected through an interview process which focuses on teaching underprepared students, and they receive extensive training and supervision throughout the semester. Selection, training, and supervision are keys to using adjunct faculty successfully. Many of the adjunct instructors have worked in the department for several years, while others use it as an interim step to graduate school or full-time employment. Each subject area is staffed with a full-time instructor/coordinator who provides leadership and curriculum development for all adjunct instructors and lab staff.

Instructional Model

The instructional model used for developmental studies at SFCC is designed to address the particular needs of "at-risk" students. This model is characterized by a number of instructional practices that research has shown to enhance the success of developmental students: multiple instructional methods to address varied learning styles, repetition of skills that build on a concrete foundation, skills presented in small increments whereby new material is linked to current knowledge, significant time on-task, structured activities, frequent feedback, and personalized attention. The comprehensive instructional model includes three class structures to promote student responsibility and prepare students for the college-level curriculum:

- Large group lectures are provided to introduce skills and concepts. The coordinator teaches up to 180 students two hours per week in these lectures in which skills and concepts are presented.
- Small group classes of approximately 24 students meet with adjunct instructors three hours per week to review concepts and help students apply skills introduced by the coordinator in the large group lecture.
- Individualized open labs allow students to practice skills and continue their application. Students work in the lab with teaching assistants and student aides on average two hours per week.

The major role of technology in the program is emerging as a support system in the labs. E-mail that provides additional communication between instructors and students is becoming a valuable retention tool. The department is also investigating the feasibility of using distance learning as a delivery system. The key consideration in using technology in the college preparatory program is to develop a system that will keep these students motivated and on-task.

This model is characterized by a number of instructional practices that research has shown to enhance the success of developmental students: multiple instructional methods to address varied learning styles, repetition of skills that build on a concrete foundation, skills presented in small increments whereby new material is linked to current knowledge, significant time on-task, structured activities, frequent feedback, and personalized attention.

Assessment and Placement

Given pressure from the Florida legislature for students to pass college preparatory courses in one semester, it is critical that the curriculum be appropriate for a wide range of entry skills. Therefore, based on research that has identified appropriate placement scores within the state-mandated scores, the college preparatory curriculum is divided into two levels. Previously, all students were placed into one level of reading and writing, and those with lower assessment scores rarely passed. An appropriate match between placement scores and curriculum is critical to student retention and success. A computerized registration system monitors the registration process and facilitates accurate placement. Institutional credit is awarded for the college preparatory courses. This credit does not count toward graduation, but it does satisfy financial aid and other requirements for full-time enrollment status.

Recognizing that no single test unerringly reflects a student's competency, a placement validation system is used to ensure that students are appropriately placed. To that end, on the first day of classes, students may take another test, usually an alternate form of the comprehensive final exam, if they are dissatisfied with their initial placement test. Based on findings of this exam, they are placed in the appropriate level of preparatory or college-level courses.

Institutional studies indicate that few students are misplaced by their initial placement testing.

For example, 1997 data show that a limited percentage of students tested out of college preparatory courses by retesting: five percent in Reading; four percent in Writing; two percent in Preparatory I Mathematics (Arithmetic); and five percent in Preparatory II Mathematics (Elementary Algebra). Although few students change their initial placement, the retesting procedure is valuable in helping students accept the need for remediation. In addition, it validates the placement test to assure that it is consistent with the curriculum.

A weakness of this system is that it is not used to assess students in college-level courses to determine if they are placed at too high levels. Therefore, students in college-level courses who have weakness may not be identified until their problems surface later in the semester.

Important Program Features

In a national survey conducted by The University of Texas at Austin, Roueche and Roueche (1993), identified the common elements of strong developmental programs: strong administrative support; mandatory counseling and placement; structured courses; award of credit; flexible completion strategies; multiple learning systems that use varied instructional methods; instructors who volunteer to teach remedial classes, as opposed to having them assigned as part of their teaching loads; peer tutors; a system that monitors student behaviors and uses intervention strategies; a system that interfaces with subsequent courses; and program evaluation. The SFCC developmental program includes all of these characteristics, with the exception of flexible completion strategies.

Several years ago, the program experimented with flexible completion strategies, but found several problems with this approach. Students who completed the remedial program before the end of the semester could not proceed since all SFCC college-level courses were offered on the traditional semester system. Because students who completed their developmental requirements could not move into a college-level course immediately, the faculty determined that it would be better to keep them in the preparatory course until the end of the semester where they could progress beyond minimal competency.

In addition to the characteristics identified by the Roueche and Roueche (1993) study, the SFCC program has other features that contribute to its success, including research-based program design, a Career/Academic Planning program, and college/high school collaborations.

Research-based. The College Preparatory Program was developed and is maintained in accordance with research findings of national leaders in the field of developmental education. The director of the SFCC program had the opportunity to train under both John Roueche and Hunter Boylan, the leading researchers in the field. This training follows the standards suggested by the Commission XVI of the American College Personnel Association, which maintains that developmental programs should be coordinated by a single administrator with appropriate background and training (as cited in Boylan, Bonham, and Bliss, 1994).

Career/Academic Planning (CAP). The CAP component of the College Preparatory Program is designed to help all developmental students choose appropriate career/academic paths, in accordance with their career and personal interests, their academic records, and SFCC program offerings. The need for the CAP activities at the college was apparent because many college preparatory students were found to have unrealistic career goals, given their time and financial resources. Also, many students were unaware of the numerous programs offered at SFCC.

Table 13.1: Career/Academic Planning (CAP) Student Retention, Fall 1996

CAP Conference	# Students	% Enrolled One Semester Later	% Enrolled One Year Later
Completed	617	80%	59%
Did NOT Complete	336	49%	36%

College preparatory students now complete a career interest inventory, a learning style instrument, and a personality profile. CAP counselors summarize the results of these inventories, then conduct individual conferences with students to present their profiles and career goals. The counselors also review with students the various SFCC programs that relate to these profiles. Although this process was not developed as a specific retention tool, Table 13.1 shows that students who completed their CAP conferences had significantly higher retention rates than those who did not. Only students from the day-time preparatory courses on the main campus were included in this pilot program, and their positive evaluations indicate that CAP needs to become a part of the permanent curriculum for all preparatory students.

College/high school collaboration. To enhance college readiness for high school graduates and reduce the need for remediation, SFCC has assumed a strong leadership role in developing college/high school collaborations. The League for Innovation in the Community College has encouraged such collaborative efforts for many years (1990). Five years ago, SFCC launched a project to systemically test and council high school students. Based on the theory that *awareness is the first step toward remediation*, the Academic Resources and Assessment Department administers the college placement test to 10th grade students and conducts high school counselor workshops. The objective of these activities is to provide feedback to students regarding their readiness for college so that they can enroll in appropriate courses to remediate skill deficiencies while still in high school.

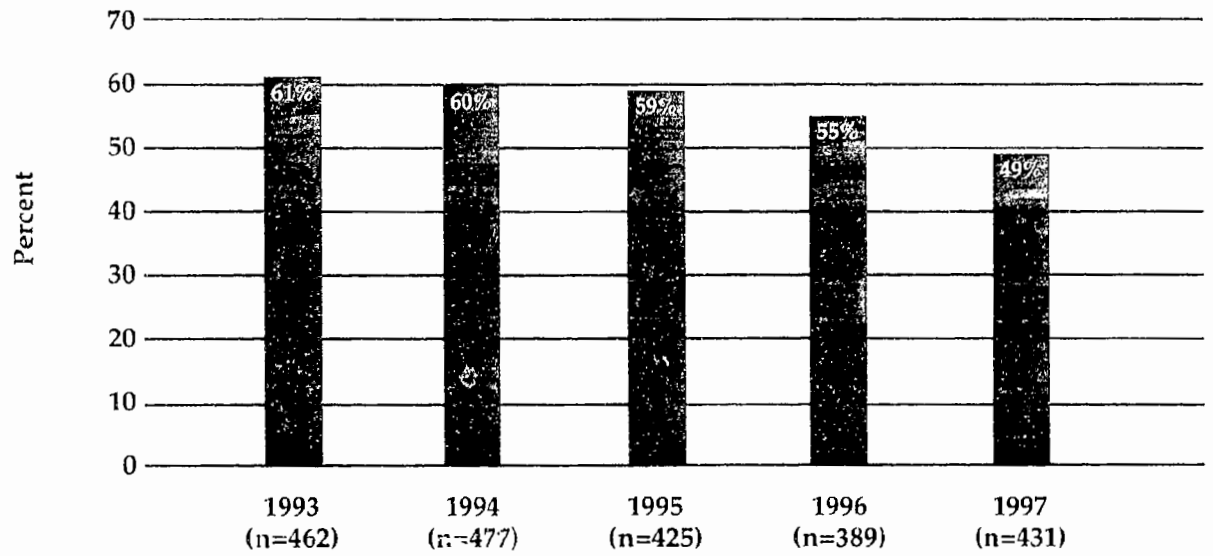
Figure 13.2 shows the percentages of local high school graduates who have needed remediation when they enrolled at SFCC during the last five years. The trend shows a steady decrease in the percentages, a trend that may be influenced by the college/high school collaboration activities.

Evaluation Design

SFCC prepares academically underprepared students for college-level work and the workplace. To ensure success in meeting these goals, constant, evaluation and revision is required. The rationale for evaluation is program improvement, state accountability, and internal reporting.

Because most students enroll in college with an academic goal that extends beyond remedial courses, the major evaluation question is: "How well do college preparatory students perform as they move through the college-level program?" The director of Academic Resources and Assessment has the major responsibility for

Figure 13.2: Percentages of Entering SFCC Freshman (High School Graduates) Who Require Remediation, 1993-1997



identifying key evaluation component and for collecting, analyzing, and summarizing data.

The department evaluation plan, which is part of the college Institutional Effectiveness Plan, consists of measures of success and student retention that track students through their college careers at SFCC. Most of the data are produced by Computer Services at the end of each semester and are analyzed by the department director. The primary tracking report, developed initially in 1981, has been revised many times as the department, the college, or the state sought new information. The current evaluation plan for college preparatory (prep) activities includes, but is not limited to, these assessments:

During prep enrollment:
- Passing rates within each college prep course
- Withdrawal rates from each college prep course

Semester following prep enrollment:
- Former prep student enrollment in subsequent key courses
- Passing rates of former prep students in subsequent key courses
- Withdrawal rates of former prep students from subsequent key courses

College-Level Academic Skills Test (CLAST):
- Performance of former prep students on CLAST

Graduates:
- Percentage of A.A., A.S., and Certificate graduates who began their college work in prep classes

Performance of former prep students who transfer to the State University System (SUS):
- Performance of former prep students when they transfer to the SUS

Student evaluations of instructors and labs:
- Included in faculty evaluations (Not included in this report)

Program Performance

Computer Services produces a tracking report at the end of each semester that provides data for the College Preparatory Program. Table 13.3 shows the passing rates and official withdrawal rates for fall 1997. These data show an overall passing rate of 64 percent (including MAT0024, but excluding ESL courses), with passing rates recorded for each subject area. Faculty from each area review these data and make program or curricula changes as needed. The same report that tracks the preparatory students into subsequent key courses and shows the passing rates and official withdrawal rates in those courses. These data are then compared to overall passing rates in the key college-level courses to determine success of preparatory students in comparison to nonpreparatory students.

Table 13.4 shows that, in most areas, fall 1996 passing rates for preparatory students in

Table 13.3: College Preparatory Student Pass and Withdrawal Rates, Fall 1997

Course	# Enrolled	Passing Rate	Withdrawal Rate
REA0001	226	68%	2.7%
REA0010	465	75%	3.4%
ENC0001	166	72%	4.8%
ENC0020	425	61%	3.5%
MAT0002	1,069	70%	3.3%
MAT0024*	713	49%	3.5%
Overall	**3,064**	**64%**	**3.4%**

** MAT0024 is not a part of the centralized College Preparatory Program, but is administered by the Mathematics Department*

subsequent key courses in spring 1997 met or exceeded the overall passing rate for nonpreparatory students. This measure is the "proof of the pudding" since a major goal of the program is to equip underprepared students with the skills to compete successfully with nonpreparatory students. A major weakness of this report is that it is limited to those students who enroll in the subsequent key course the following semester. If students postpone enrollment in that course, they are not captured as preparatory students and are not represented in the evaluation. Notwithstanding this tracking limitation, these data provide valuable benchmarks for the department to use in program evaluation.

Another measure of program effectiveness is determined by the performance of former preparatory students on the state-mandated CLAST test, taken after they have completed designated college-level courses. This assessment for first-time testers compares preparatory student to nonpreparatory student passing rates. Table 13.5 shows that, in this measure, former preparatory students consistently achieved lower passing rates than nonpreparatory students the first time they take the test.

Students who fail their first attempt are required to remediate the CLAST skills to improve their performance and retake the test. The *Florida 1996 Accountability Plan, Accountability Outcome Measure #5* reports that 78.1 percent of Florida students with 60 or more hours of college credit passed all parts of CLAST. Specifically, 63.3

Table 13.4: Passing and Withdrawal Rates of Former Preparatory Students in Subsequent Key Courses, Fall 1996/Spring 1997

Course	# Enrolled	Passing Rates		Withdrawal Rates	
		Former Prep	Non-Prep	Former Prep	Non-Prep
REA0010/REA2205	211	60.7%	61.6%	7.6%	6.7%
ENC0020/ENC1101	119	65.5%	56.9%	14.3%	12.4%
MAT0002/MAT0024	506	45.7%	45.6%	12.1%	11.5%
Overall	836	57.0%	55.0%	11.3%	10.2%

Table 13.5: Preparatory and Nonprepatory Student Passing Rates on CLAST First-Attempt

Year	Essay		English Language Skills		Reading		Math	
	Former Prep	Non-Prep	Former Prep	Non-Prep	Former Prep	Non-Prep	Former Prep	Non-Prep
Oct 1997	93.3%	84.7%	46.7%	77.6%	53.8%	60.0%	37.7%	54.7%
Jun 1997	41.7%	92.6%	33.3%	80.2%	50.0%	86.0%	32.8%	69.0%
Feb 1997	88.0%	86.0%	40.0%	75.1%	60.6%	77.0%	37.8%	62.1%

percent of students who were enrolled in at least one college preparatory class and 89.4 percent of students who did not take any college preparatory classes passed all parts of CLAST (State of Florida, 1996). This finding indicates the need for continued academic support after the student leaves the college preparatory program. The department offers this support through the learning labs, but many students do not take advantage of these services.

Long-term effectiveness of the college preparatory program is an important component in the evaluation plan. Table 13.6 shows that more than one-third of SFCC graduates consistently start their college careers in remedial courses.

Table 13.7 provides an exciting nugget of information that was discovered in State Accountability Reports. Information from the 1996 *Accountability Plan, Accountability Outcome Measure #2, A.A. Transfers Report by College Preperatory Status* addresses the performance of community college graduates after they enroll in the State University System (SUS). It shows the numbers of former preparatory and non-preparatory transfers and the GPAs for each group. It is rewarding to see that many of the former remedial students are graduating from SFCC and enrolling in the SUS, and that GPAs for former preparatory students are very close to those of nonpreparatory students. These findings are especially impressive because most students who began in remedial studies would not have been admitted into the SUS before attending community college. Enrollment in the community college and the preparatory courses, however, successfully filled the gap in academic preparation (State of Florida, 1996).

College Preparatory Program Cost

The SFCC cost data for the last two years, produced by the Office of Administration and Finance, show that $1,057,789 or 2.75 percent of the 1996-97 total college budget was spent on remediation (Table 13.8). Since this sum provided 6,216 seats in remedial classes (including MAT0024 and ESL activities) and related support services, it appears to be an excellent investment.

Summary

The SFCC College Preparatory Program is the major component in the Academic Resources and Assessment Department. It supports the college mission(to provide access to postsecondary education for all students, regardless of their levels of academic preparation. The comprehensive program centralizes preparatory (remedial) courses and services and give optimum resources for underprepared students. This research-based program consists of structured remedial courses, tutoring services in labs, advisement, and career/academic planning, referral services to counselors and financial aid. Services are provided for students enrolled in A.A., A.S., and Certificate programs. As part of the Workforce Development initiatives, the program is expanding to include Adult Education

Table 13.6: Percent of SFCC Graduates Who Started in Remedial Courses

	AA Degree		AS Degree		Certificate		Total	
	#	%	#	%	#	%	#	%
Summer 1997	169	30.2%	72	41.9%	65	42.5%	306	34.6%
Fall 1996	151	35.8%	41	36.9%	20	26.3%	212	34.8%
Summer 1996	150	28.6%	91	51.7%	81	42.9%	322	36.2%
Spring 1996	127	30.4%	68	33.2%	37	24.0%	232	29.9%

Table 13.7: Performance of Former Preparatory and Nonpreparatory SFCC Students in the Florida State University System

Year	Former Preparatory Students		Non-Preparatory Students	
	# Students	Mean GPA	# Students	Mean GPA
1994-95	145	2.69	207	2.82
1993-94	131	2.95	155	2.97
1992-93	104	2.91	173	2.77
1991-92	134	2.80	242	2.91

leading to the General Education Diploma (GED) or development of literacy skills for the workplace.

Collaboration with local high schools is an important feature of the program. Assessment and research are utilized to reduce the need for remediation for recent high school graduates. Since this collaboration began five years ago, there has been a decline of 12 percent in the number of recent high school graduates who need remediation.

The department evaluation plan is a part of the overall college institutional effectiveness plan. It includes components that measure both short-term and long-term program effectiveness at various times throughout the preparatory student's college career. Evaluation components include: success and withdrawal rates in college preparatory courses; success and withdrawal rates of former preparatory students after enrollment in subsequent key courses; success of preparatory students compared to nonpreparatory students on CLAST; percent of SFCC graduates who began their academic careers in college preparatory classes; and performance of former preparatory students compared to nonpreparatory students after they transfer to the State University System.

Evaluation results show a 64 percent overall passing rate in preparatory courses in fall 1997, with 3.4 percent withdrawal rates. The first measure of success after students leave college preparatory classes is demonstrated by their performance in subsequent key college courses. The need for continued academic support for students after they leave preparatory courses is evident in first-time CLAST performance, as preparatory students consistently score lower than nonpreparatory students the first time they take the test.

Collaboration with local high schools is an important feature of the program. Since this collaboration began five years ago, there has been a decline of 12 percent in the number of recent high school graduates who need remediation.

Assessment data show that approximately one-third of all SFCC graduates started their academic careers in remedial courses. Because of the program's long-term effectiveness, many of these students proceeded to the State University System, where they are successful and demonstrate GPAs very close to those of nonremedial students.

Given news accounts of attacks on college preparatory programs and the intense attention to remediation costs in community colleges, one

Table 13.8: SFCC Remediation Costs

Year	Amount Spent for Remediation	Percent of Total College Budget
1996-97	$1,057,789	2.75%
1995-96	$1,139,787	3.18%

might conclude that remediation activities are bankrupting the educational system. However, SFCC cost data illustrate the fallacy of this assumption. In actuality, only 2.75 percent of the 1996-97 total college budget was spent on remediation. That figure included 6,216 seats in remedial courses and extensive preparatory support activities. Extensive program evaluation data, which demonstrate the continuing need for remediation services, document successful program outcomes, and underscore the low costs of the program, leave no room for doubt that the resources allocated for college preparatory services at SFCC provide an outstanding return on the investment.

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Chapter 14

TRIDENT TECHNICAL COLLEGE DEVELOPMENTAL STUDIES

Mary Thornley and Thomas Clark

Institutional Profile

Trident Technical College (TTC) is a two-year, community-based college located in Charleston, South Carolina. TTC was founded in 1964, as part of a statewide system of 16 technical education centers with the mission of providing quality education and promote economic development. Since the 1960s, when governor Ernest F. Hollings proclaimed that to bring industry to South Carolina the state must promise "more than moonlight and magnolias," the TCC has focused on offering associate degrees, diplomas and certificates to meet the needs of business and industry.

The hallmark of the college is its ability to prepare students for a rapidly changing global environment. Its 90 programs of study reflect the community's need for educated professionals in business, engineering technology, health care, public service, industrial technology and hospitality, and tourism. Its Associate in Arts and Associate in Science programs support the growing numbers of students who begin their studies at a community-based college and then transfer to a four-year college or university.

To serve the coastal counties of Charleston, Berkeley, and Dorchester, TTC operates three campuses. Approximately 80 percent of its 9,000 academic students enroll at the Main Campus in North Charleston. The Palmer Campus, located in the heart of the city of Charleston, serves approximately 16 percent of the student body. The remainder of TTC students take classes at the rural Berkeley Campus near Moncks Corner. Close to 58 percent of the students are female, and 21 percent are African American. The typical student is 28-years old and works full- or part-time. More than 60 percent of the students attend classes on a part-time basis.

The Developmental Studies Program

The diversity of TTC's student body demands a strong and flexible developmental studies program. Research documented in this chapter demonstrates the persistence of development studies students, as well as their ability to keep pace with nondevelopmental students in credit hours earned and GPA. Equally compelling is the extensive program evaluation that allows immediate curricular revision.

The developmental studies program supports the overarching institutional mission by helping students obtain skills and knowledge needed for success in educational programs and the world of work. Many students who wish to continue their formal education beyond the secondary level lack fundamental skills in reading, mathematics, and the English language. Developmental studies courses in reading, basic mathematics, and English and are designed to remove these deficiencies and prepare students for entrance into college-level programs.

The large number of students who demonstrate specific deficiencies make apparent the need for development studies. Each student entering TTC who does not have qualifying SAT or ACT scores takes a series of placement tests administered as untimed, adaptive assessments in basic English, reading, arithmetic, and elementary algebra. The college determines placement of students in courses based on the competencies demonstrated by these test scores. A recent profile of the student body reveals that 31 percent had taken at least one course in developmental studies, excluding beginning algebra. If beginning algebra is included, the proportion of TTC students who have taken or are currently enrolled in developmental courses increases to approximately 46 percent. At the time of the profile, approximately 10 percent of the overall college courses offered were developmental studies courses. Research shows that remedial education needs of TTC students are pervasive across academic, technical, and professional programs.

In a broader view, the Developmental Studies program is important to the community because it

In a broader view, the Developmental Studies program is important to the community because it provides a formal means for adults to work on basic skills and knowledge.

provides a formal means for adults to work on basic skill and knowledge. Nevertheless, state support for remedial programs continues to be closely scrutinized by policy makers as questions about the appropriateness of developmental studies in higher education persist. In spite of the policy debate, developmental English and reading offerings continue to assist adults in gaining language and communication proficiencies that enable them to contribute to the community's economic, social, and cultural life. Similarly, developmental mathematics provides adults with basic arithmetic skills and procedures important to their work and daily lives.

Program Organization

The Department of Developmental Studies is housed within the Division of Arts and Sciences. This close organizational proximity with the traditional curriculum helps maintain the alignment of learning objectives across courses. The department staff consists of a department head, 13 full-time faculty, an administrative assistant, and three part-time computer laboratory assistants. Full-time faculty members serve as computer laboratory coordinator and mathematics instructors.

In addition to full-time faculty, the department depends upon part-time faculty to teach developmental courses. In recent years, adjunct teaching staff handled approximately 44 percent of the instructional credits.

The developmental English course (ENG 049) provides grammar-based instruction with emphasis on basic writing skills. Students who score below a criterion score in sentence structure on the college placement test are required to successfully complete the 4-hour, nondegree credit course.

The developmental reading program is organized into two courses for different reading levels. The first-level course is for students who demonstrate lower reading comprehension on the college placement test. The developmental reading course (RDG 048) focuses on vocabulary, comprehension, use of reference materials, and an introduction to analysis of literature; it is offered as a 4-hour, nondegree credit course. The second-level reading course targets students who demonstrate a minimum level of reading comprehension, but do not show readiness for understanding college-level material. This course, Critical Reading (RDG 100), prepares students to read college-level texts, technical manuals, and literature, and is a 3-hour, nondegree credit course.

The sequence of remedial offerings for mathematics is similar to that for reading. The developmental mathematics program is organized into two courses under the purview of the Developmental Studies Department and one under the Mathematics Department. The first level, developmental mathematics (MAT 044), focuses on basic arithmetic operations with whole numbers and fractions, decimals, percentages, measurement and some algebraic and geometric concepts. This 4-hour, nondegree credit course also emphasizes word-problem skills to prepare students for future courses and life-skills.

Beginning and Intermediate Algebra prepare students for further study in technical fields, sciences, and mathematics. The college recognizes that across the state and nation, consensus has yet to be established on the appropriate classification of algebra–whether it should be considered as a developmental course per se, or as a transition content course. At TTC, the Developmental Studies Department teaches the beginning algebra course, while the faculty of the Mathematics Department teach Intermediate Algebra. The learning objectives and teaching standards for both courses incorporate the standards for content and teaching practice published by the American Mathematics Association for Two-Year Colleges, the National Council of Teachers of Mathematics, and South Carolina Department of Education. Both courses are offered as 3-hour, nondegree credit course.

Learner Support Services

The college offers support for student learning in several ways. The Learning Assistance Center, Testing Services, Student Support Services, Distance Learning and Broadcast Services, and the Learning Resources Center all offer individual students supplemental and alternative ways to learn. In addition, the Developmental Studies Department manages the SCANA Creative Learning Laboratory.

SCANA Creative Learning Laboratory. The Creative Learning Laboratory, sponsored by a grant from the SCANA Corporation, is a comprehensive computer facility for all students enrolled in developmental studies courses. Opened in 1996, the lab offers supplemental instruction, as well as practice and testing in developmental English, reading, and mathematics. Currently, the lab has 36 student workstations equipped with networked and stand-alone instructional packages. Each full- and part-time developmental studies faculty member receives initial training in the discipline-specific use of the lab. These applications include networked instruction; practice for reading and writing, arithmetic and elementary algebra; and access to Internet resources. From 90 to 130 students use at least one courseware application per day.

Learning Assistance Center and Testing Services. The Learning Assistance Center offers direct support to students in the form of individual and small-group tutorials, videotaped lessons on specific topics, and student workshops on topics such as how to use a calculator and how to study. The Developmental Studies Department provides the center with course syllabi and the latest copies of text materials and coordinates with center staff to refer students for learning support.

Student Support Services. Through its counseling services, Student Support Services confidentially assesses student needs and works with instructors to meet the needs of students who meet specific criteria for learning accommodations. Eligibility for these services is determined by specific documented evidence concerning existing psychological or physical conditions pertinent to the student's learning or testing needs.

Distance Learning and Broadcast Services. The Developmental Studies Department transmits several mathematics courses to the college's satellite campuses and other locations through the Distance Learning and Broadcast Department. In an effort to provide flexible learning options, developmental mathematics courses are offered at remote sites through the Instructional Television Fixed Service (ITFS).

The Learning Resources Center. The Learning Resources Center (LRC) works cooperatively with the Developmental Studies Department by making appropriate resources available to students. LRC resources that support student learning in remedial studies include video lessons with tests and an elementary algebra video series created by Developmental Studies faculty.

Evaluation Design

The Developmental Studies program is evaluated primarily by an internal college and department process. The main purpose of the evaluation is to support continuous improvement and ensure accountability.

The internal process, the institutional effectiveness study of the college, is a formal analysis of the department's performance based on a set of objectives or indicators. Indicators of progress for the Developmental Studies program are changed from year to year as improvements are made and student needs change. The department reviews the results annually and adds or deletes evaluation criteria according to the particular focus of accountability and general evaluation. The most recent institutional effectiveness study included 20 indicators that apply specifically to the Developmental Studies Department.

The college Institutional Research office uses the Goal Attainment Scaling (Kiresuk and Garwick, 1974) as a measurement tool for developing multivariable, scaled descriptors that can, in turn, be used for establishing objectives, developing standards, and judging the results of assessed outcomes. The Goal Attainment Scale (G.A.S.) is designed specifically for the department with indicators pertinent to its programs. The process allows for the relative importance of various indicators (i.e., weighting) and incorporates an expected level of attainment for each indicator. The relative value, or weighting, of the indicators and the attainment expectations may be revised from one annual evaluation to the next. The indicators used to evaluate the developmental studies department program focus on four primary variables: (1) student achievement, (2) retention/persistence, (3) efficiency, and (4) student evaluation of the course and instructor.

Data are collected annually and incorporated into the college institutional effectiveness report. The report is the basis for the next phase of strategic planning in which faculty examine the results for specific indicators. In addition, student perception data are gathered each term on every class and used in the annual institutional analysis.

Program Performance

The 1993 institutional effectiveness study in which the G.A.S. was first used established baseline values for the performance indicators. With no prior systematically collected data for a guide, the Developmental Studies Department set its baseline values–the expected values on the G.A.S.–at levels the faculty believed to be ambitious, yet realistic. The actual values for the 20 initial indicators proved to be a test of those expectations, and results for eleven of the indicators met or slightly exceeded expectations, while measures of nine indicators fell short of the expected values.

Student achievement on this first use of the G.A.S. defined student "success" in subsequent courses as the percentage of students who successfully exited a Developmental Studies course and achieved a grade of "C" or better in the subsequent course. Withdrawals from a course for any reason, along with unsatisfactory grades, were included in the count of "unsuccessful" (see Table 14.1).

Reading Gains

Since 1992, when the first G.A.S. data were collected, important changes have been made in the developmental studies curriculum, course sequence, student placement, and institutional effectiveness indicators. Revisions have included the placement of most students who are successful in developmental reading (RDG 048) into the critical reading course (RDG 100); the deletion of the indicators involving the psychology course (PSY 201) because of its expectation of a "grade 14" reading level; and the deletion of the indicators involving the speech course (SPC 205) because of low enrollment of students from developmental studies.

The Developmental Studies department also added the analysis of mean gains on the vocabulary and comprehension subtests of the Nelson-Denny Reading Test (Brown, Bennett, and Hanna, 1981) to these G.A.S. indicators. The preliminary findings of the mean gains on vocabulary and reading comprehension using the Nelson-Denny are encouraging. The students who were enrolled in the developmental studies courses RDG 048 and RDG 100 during fall 1997 were pre- and post-tested with the Nelson-Denny Reading Test. In all, there were 352 students with complete data from the two courses with 198 valid cases from RDG 048 and 154 students from RDG 100. The two courses were analyzed separately on vocabulary and comprehension, using a t-test for paired samples. For ease of interpretation, the raw scores were converted to grade-level equivalents before analysis.

The results indicate that, for both reading comprehension and vocabulary, the mean grade

Table 14.1: Fall 1992 Developmental Student Achievement Indicators on Baseline Data (Success in Subsequent Course)

Program Effectiveness Indicators		Expected	Actual Outcomes
RDG 100 Success in CPT 101	(N=6)	60-65%	83%
MAT 101 Success in MAT 120	(N=56)	57-63%	61%
ENG 049 Success in ENG 100	(N=51)	75-80%	78%
RDG 100 Success in PSY 210	(N=5)	60-65%	20%
MAT 101 Success in MAT 102	(N=99)	57-63%	40%
RDG 048 Success in PSY 201	(N=17)	60-65%	53%
RDG 048 Success in SPC 205	(N=15)	60-65%	40%
RDG 048 Success in CPT 101	(N=25)	60-65%	53%
MAT 044 Success in MAT 101	(N=66)	70-75%	58%

equivalent increase was educationally and statistically significant. Comprehension and vocabulary scores increased approximately 2.5 grade levels for students enrolled in RDG 048 (vocabulary from 8.0 to 10.7; comprehension from 8.3 to 10.7) and approximately 3.0 grade levels for those in RDG 100. All mean differences from pre- to post-tests were statistically significant at the .05 level.

The analysis from the fall 1992 institutional effectiveness evaluation included seven indicators addressing withdrawal rates and developmental studies exit requirements. In four of the seven indicators, the actual outcomes exceeded or met expectations while three objectives fall below expectations. These results for fall 1992 are shown in Table 14.2. These data do not reflect students who were successful in subsequent terms.

Student Satisfaction

Student satisfaction and perception are integral to the performance of any college department, even though these indicators are often referred to as surrogate indicators of quality. Responses to the Student Evaluation of Course and Instruction (SECI) play an important role in planning and revising courses, in making instructional assignments, and in administering the Faculty Performance Management System. All four indicators from recent SECI evaluations demonstrate more positive than expected student satisfaction and perception for both levels of developmental courses. Table 14.3 shows a comparison of the expected versus the actual outcomes for the four indicators. On these indicators, "Course" refers to subject matter and its perceived relevance to the student, while "Instruction" includes the teaching styles, instructional materials, use of media, and fit with style of learning.

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Completing College-Level Courses

The 1,414 students who successfully completed developmental studies courses from the three terms prior to fall term 1997 attempted a number of core college-level courses (English, math, psychology, speech, and computer technology) in the fall 1997 term. Of these 915 developmental students, 443 (48 percent) succeeded in their college-level courses. This result compares favorably with the 55 percent success rate of nondevelopmental studies students taking the same core courses.

Persisting in Pursuit of Academic Goals

The persistence of students who begin in the Developmental Studies (DS) program to continue to enroll at the college, term after term, was compared to the persistence of nondevelopmental studies students (Non-DS) over the same period. In particular, the cohort of DS students who enrolled in the fall 1995 term (N=326) was tracked for six terms and compared with the cohort of Non-DS students (N=602) from that same period. The percentages of students for both cohorts who enroll in subsequent terms are shown in Figure

Table 14.2: Fall 1992 Withdrawal/Retention and Exit Requirement Completions

Program Effectiveness Indicators	Expected Outcomes	Actual Outcomes	Outcomes Excluding Withdrawals
Withdrawal Rate for 0-level Courses	15-21%	16%	N/A
Withdrawal Rate for Transition Courses	17-23%	20%	N/A
Percent Completing RDG 100	68-73%	77%	91%
Percent Completing MAT 101	59-65%	63%	80%
Percent Completing RDG 048	59-64%	51%	59%
Percent Completing ENG 049	49-54%	46%	54%
Percent Completing MAT 044	72-76%	54%	66%

14.4. As this chart indicates, developmental studies students were somewhat more persistent than nondevelopmental studies over the six terms examined.

Earning Credit Hours from Term to Term

Comparing the ratios of the number of credit hours earned to the total number attempted helps address the issue of the program's efficiency. Figure 14.5 provides a comparison of the same developmental studies student cohort (DS) who entered in the fall of 1995 with their counterpart cohort of nondevelopmental studies students (Non-DS) in terms of credit hours earned. The percentages of earned credit hours to attempted credit hours for each group were tracked over the six subsequent terms.

As the data shown in Figure 14.5 indicate, the developmental studies cohort seems to compare favorably with the nondevelopmental studies cohort over the six subsequent semesters in terms of course completion and credits earned. Examination of cohorts originating from other years has shown similar results over subsequent terms.

Comparing Grade Point Averages

The college's institutional researchers have compared grade point averages using the same cohort groups for seven consecutive terms from fall 1995, and found that the developmental studies cohort (DS) achieved nearly the same mean grade point average in their credit courses as did the nondevelopmental studies cohort (Non-DS). Figure 14.6 compares the two cohorts on grade point averages from fall 1995 through fall 1997.

The data from Figure 14.6 provide evidence that, while students in the Developmental Studies program do not achieve at quite the same level as their nondevelopmental counterparts on college core courses, their achievement is sufficiently high to warrant expectations for success in college-level work.

At What Cost?

In fall 1997, TTC had a total FTE enrollment of 5,008. Nearly seven percent of the college total, 337 FTE, were enrolled in developmental studies. Based on the fiscal year 1996-97 audited data, the FTE cost per semester for all students in all programs was $1,090. The FTE cost for developmental studies courses was $991 per FTE. The developmental studies credit-hour cost, during this same time period, was $66.11 per credit hour, while the collegewide cost for instructional programs was $72.68 per credit hour.

Summary

Findings from the study of student performance, persistence, efficiency, and student satisfaction offer a mix of strengths and challenges associated with TTC's Department of Developmental Studies. The greatest challenge facing the program is the need to reduce the number of students withdrawing from developmental studies courses. As is true throughout TTC and in most community-based colleges, students in developmental studies most often withdraw for nonacademic reasons, such as family and employment demands. Thus, the challenge is to provide greater flexibility in program delivery and format so that students can meet outside commitments while remaining in college. As described in this chapter, students who

Table 14.3: Student Satisfaction and Perception for Developmental Courses and Instruction

Program Effectiveness Indicators	Expected Outcomes	Actual Outcomes
% Students Satisfied with 0-level Courses	78-83%	87%
% Students Satisfied with 0-level Instruction	68-73%	77%
% Students Satisfied with Transition Course	78-83%	88%
% Students Satisfied with Transition Instruction	80-85%	85%

Figure 14.4: Persistence of Fall 1995 Cohorts of Developmental Studies and Nondevelopmental Students by Subsequent Term Enrollments

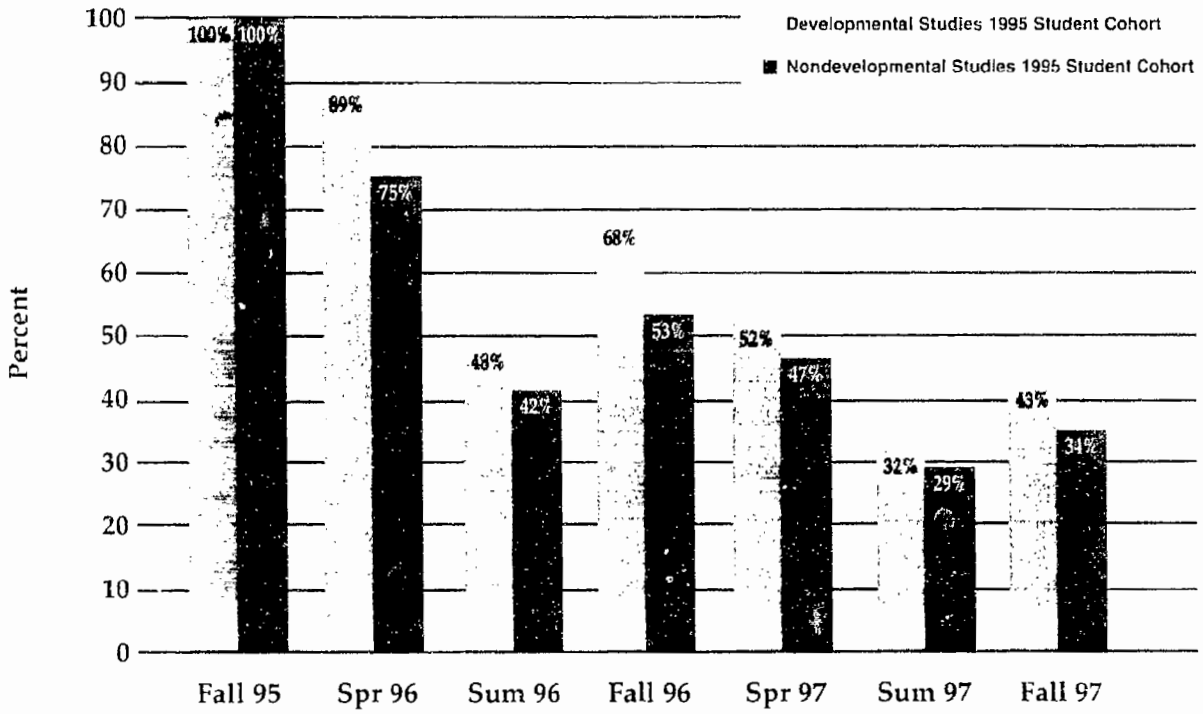


Figure 14.5 Percentages of Earned Credit Hours to Attempted Hours, Developmental Studies (DS) and Non-DS Student Cohorts 1995-1997

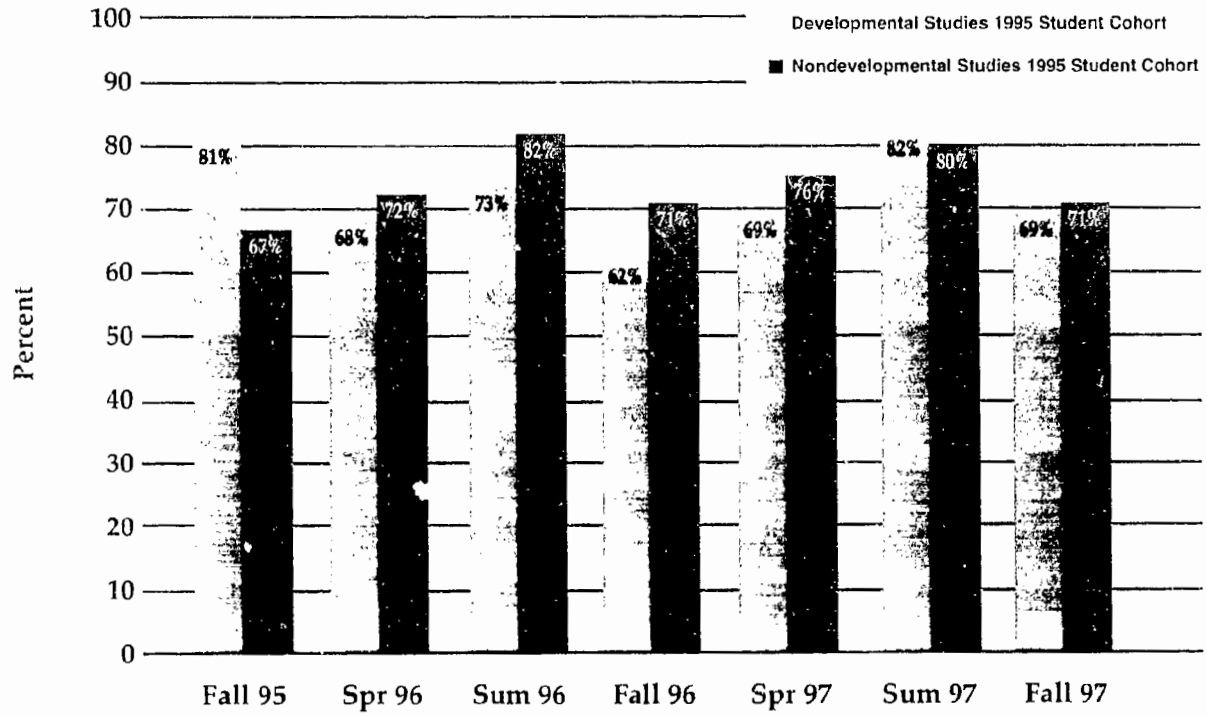
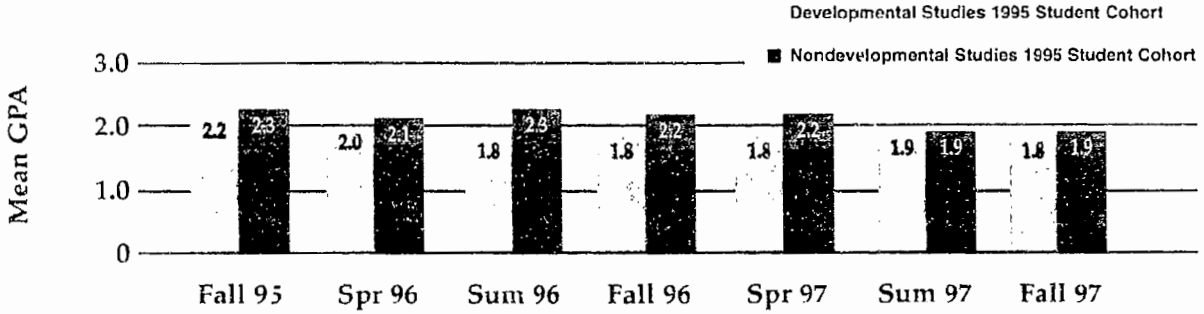


Figure 14.6: Mean Grade Point Average in College-Level Courses, Developmental and Nondevelopmental Student Cohorts, 1995-97



do remain in developmental studies courses are successful and remarkably persistent in achieving their academic goals.

Strengths of the Developmental Studies program include many aspects of student achievement–persistence, student satisfaction, and efficiency. Specifically, program evaluation data reflect commendable gains by developmental students in vocabulary, reading comprehension, student persistence, academic achievement, and grade point average. Academic achievement in terms of completion of core courses and grade point average is on par with that of nondevelopmental studies students. Finally, there is evidence that students in the Developmental Studies program earn college-level course credit as efficiently as nondevelopmental studies students. Woven throughout these strengths is TTC's comprehensive evaluation design and the college's ability to use these data to continuously improve.

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THE COLLEGE BOARD

Founded in 1900, the College Board is a not-for-profit educational association that supports academic preparation and transition to higher education for students around the world through the ongoing collaboration of its member schools, colleges, universities, educational systems, and organizations.

In all of its activities, the Board promotes equity through universal access to high standards of teaching and learning and sufficient financial resources so that every student has the opportunity to succeed in college and work.

The College Board champions educational excellence for all students–by means of superior research; curricular development; assessment, guidance, placement, and admission information; professional development; forums; policy analysis; and public outreach.

In the spring of 1997, the College Board established the Office of Community College Relations. Its primary goal is straightforward: to lay the groundwork for a more integrated and coordinated relationship between the College Board and America's community colleges, a partnership based on common interests and concerns. By working together more closely and more deliberately, the College Board and community colleges will inevitably complement and strengthen each other's efforts to meet the educational challenges of the twenty-first century.

An association that celebrates educational equity and excellence, the College Board's core mission is to support the academic preparation and transition to higher education of all students. The historical mission of the community college embraces similar goals. Serving five-and-one-half million students, or 45 percent of all undergraduates in the United States, community colleges have traditionally offered students universal access to educational opportunity, flexible scheduling, and low tuition–and have always viewed student diversity as a strength. Without question, a College Board/community college partnership, built on a mutual, bedrock commitment to educational equity and excellence has a compelling logic to it, and each of the partners has much to offer.

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