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ABSTRACT

This report reviews issues surrounding higher education developmental education programs that support under-prepared college students; especially the provision of below-college-level developmental courses at public institutions of higher education in Ohio. Information was gathered from 25 state-assisted campuses. Analysis indicated that approximately 26 percent of the student sample was under-prepared for college work. Most of the students enrolled in these remedial programs were 18- to 24-years-old, female, and Caucasian (although African-Americans and Hispanic Americans were disproportionately represented in these courses) and approximately half were recent high school graduates. Among other findings were that approximately 56 percent of under-prepared students had taken a college preparatory curriculum in high school. The below-college-level program was found to improve English course performance and short-term retention, but seemed less effective in improving graduation rates. Among recommendations are: (1) that under-prepared students complete below-college-level courses at regional campuses and two-year schools before attending four-year institutions; (2) that passing of the Twelfth Grade Proficiency Test be a condition for acceptance at four-year institutions; and (3) that additional funding be given to expand special programs which reduce the need for below-college-level courses. Appendices include a description of developmental education and information on expectations for two-year and regional campuses, programs to reduce the need for below-college-level instruction, and strategies for retaining and graduating minority members. (Contains 84 references.) (DB)

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Remedial and Developmental Programs in Ohio's Public Colleges and Universities

LEGISLATIVE OFFICE OF EDUCATION OVERSIGHT
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The Legislative Office of Education Oversight (LOEO) serves as staff to the Legislative Committee on Education Oversight. Created by the General Assembly in 1989, the Office evaluates education-related activities funded wholly or in part by the state of Ohio. LOEO prepares research reports and information memos on topics selected by its Committee. Research reports provide conclusions and offer recommendations. Information memos are short descriptions of programs or issues.

This report from the LOEO to the Legislative Committee on Education Oversight examines higher education developmental education programs which support academically underprepared students to a level where they can succeed in college. ***Conclusions and recommendations in this report are those of the LOEO staff and do not necessarily reflect the views of the Committee or its members.***

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Legislative Office of Education Oversight
Columbus, Ohio

September 1995

Remedial and Developmental Programs in Ohio's Public Colleges and Universities

More underprepared students 25 years and older (44%) were retained than prepared students the same age (27%).

In terms of remaining in college, overall, 65% of prepared students were retained compared to 57% of underprepared students. However, underprepared older students were retained at higher rates than prepared students their same age. Apparently, older students who have been away from the classroom for a period of time are able to stay in college when they enroll in below-college-level courses to correct academic deficiencies.

Graduation rates for prepared university students were much higher (54%) than for their underprepared counterparts (35%).

Regarding graduation rates, at the university main campuses, 54% of prepared younger students graduated compared to 35% of the underprepared ones. However, underprepared older students, although few in number, graduated at a higher rate (24%) than their prepared counterparts (9%). At the technical colleges, graduation rates for prepared and underprepared students were about the same (27% vs. 22% for 18-24 year olds; 20% vs. 17% for those 25 and older). LOEO could not calculate graduation rates for regional campuses and community colleges.

Underprepared Caucasian students graduated at a higher rate (39%) than prepared (31%) and underprepared (20%) African-American students. The literature suggests this could be partially due to the lack of specific support services geared to retaining and graduating minorities.

A number of factors beyond academic performance may influence whether a student remains in college until graduation. Ohio's high tuition may affect graduation rates as much as decisions to transfer to other institutions, changes in career goals, poor health, or financial hardship. Therefore, it is unrealistic to attribute students' success or lack of success solely to below-college-level developmental education programs.

Recommendations

Some aspects of Ohio's higher education and K to 12 system could be modified to reduce the percentage of students enrolling in below-college-level courses and improving the system's capabilities of serving students that do. These modifications are described in the following recommendations.

LOEO recommends:

- The Ohio Board of Regents encourage under-prepared students to complete their below-college-level work at regional campuses and two-year colleges before being admitted to main campuses of four-year universities. This policy could be accomplished by not providing instructional subsidy or other state funding for below-college-level courses to universities' main campuses. An exception could be made for students in geographic areas where no two-year colleges are available. This would allow funding for below-college-level instruction to be targeted, providing the necessary resources for all two-year campuses to offer comprehensive developmental education services.

- Ohio's secondary schools increase their academic preparation of students by expecting that all students who intend to enter higher education are able to accomplish the learning outcomes of Ohio's Twelfth Grade Proficiency Test. Students passing this test will be prepared for freshman-level college courses at both two-year and four-year institutions.

- Ohio's four-year universities require recent Ohio high school graduates to pass the Twelfth Grade Proficiency Test as a condition for acceptance to their main campuses.

- The Ohio Board of Regents and the Ohio Department of Education seek additional funding to expand special programs that prove to be effective in reducing the need for below-college-level courses.

- The Ohio General Assembly reestablish line item funding for developmental education to help ensure that all institutions offer comprehensive support services, including counseling, tutoring, and academic advising. The line item will also help institutions offer services targeted specifically for retaining and graduating minorities. Four-year institutions should receive this funding for college-level services only; two-year institutions should receive funding for both college-level and below-college-level support services.

- The Ohio General Assembly continue to fund and encourage the earliest possible completion of the higher education Uniform Information System. It is not possible to evaluate the effectiveness of individual programs or the higher education system as a whole without a comprehensive and system-wide database.

- The higher education Uniform Information System and Ohio's K-12 Education Management Information System be linked. This will allow elementary, secondary, and higher education to be viewed and evaluated as one "system," and will allow smoother and more successful student matriculation from one level to another.

SUMMARY

Remedial and Developmental Programs in Ohio's Public Colleges and Universities

This Legislative Office of Education Oversight (LOEO) report examines higher education developmental education programs which support academically underprepared students to a level where they can succeed in college. Some Ohio legislators are concerned with high school graduates who need below-college-level instruction even after meeting college entrance requirements. LOEO found that 26% of the students in our sample took such courses.

Background

LOEO found that 26% of the students in our sample took below-college level courses.

The terms "remedial" and "developmental" instruction refer to higher education programs that help ease students' transition from high school to college or help older students reenter an academic environment. These programs include both college-level courses (e.g., a refresher course in calculus for mathematics majors) and below-college-level courses (e.g., basic courses in reading, writing, or mathematics).

LOEO intended to estimate the current costs of offering just the below-college-level portion of developmental education in Ohio and to determine if these courses are more expensive at two- or four-year institutions. However, since the Ohio Board of Regents does not have a higher education system-wide data base, they could not provide student enrollment and cost data specifically for below-college-level courses.

The only available cost information is from Regents for developmental education programs as a whole for the 1990-1991 academic year. An estimated $32 million of combined instructional subsidy, developmental education line item, federal, and institutional funding was available to Ohio's state-assisted institutions for that year. This amount represents 1.2% of their instructional and general income. The developmental education line item was eliminated from the state budget in fiscal year 1993.

The absence of a higher education system-wide database also prevented LOEO from tracking transfer students

Due to the lack of a higher education information system, the only data on the cost of developmental programs is from the 1990-1991 year, estimated at $32 million.

or distinguishing degree-seeking students from occasional ones. Regents is currently developing an integrated database system that links student, faculty, course, and financial information. The database system is about two years from completion.

Of 60 state-assisted campuses, 25 were able to provide LOEO with data for analyses. Since these campuses were not randomly selected, conclusions in this report are limited to these 25 campuses and are not necessarily true for all state-assisted institutions. Moreover, since virtually no institution maintained all the data we requested but had to reconstruct it from several sources, the numbers presented in this report should be considered estimates.

Ohio Board of Regents' policies

Ohio's college preparatory curriculum specifies the number of high school courses in each subject area, but does not result in a statewide standard reflecting the skills and knowledge to be learned.

To better prepare students for higher education, the Ohio Board of Regents recommended a college preparatory curriculum for high school students in 1981. The curriculum calls for four years of English, three years of mathematics, three years of social studies, three years of science, and two years of foreign language courses. Although the specific skills and knowledge students should learn within these college preparatory courses were specified by a Regents task force in 1981, Ohio high schools do not appear to use them as a common standard for their teaching.

According to Regents, by 1987 all four-year universities had adopted the college preparatory course recommendations as an admissions requirement. No statewide list of college preparatory courses is specified for two-year institutions.

Although virtually all state-assisted institutions offer below-college-level courses, Regents believes two-year institutions should be primarily responsible for offering them. To support this philosophy, Regents adopted a statewide articulation policy, which eases student transfers among public institutions. Regents also adopted nine service expectations for two-year colleges and regional campuses, two of which emphasize these institutions' responsibility for providing developmental education and preparing students for the workforce.

Ohio's state-assisted institutions

Each state-assisted higher education institution determines its own admissions standards, course offerings, graduation requirements, and developmental education and other policies. All institutions are subject to Ohio "open admissions" law that requires high school graduates to be admitted to the public institution of their choice. However, universities require students to complete a college preparatory curriculum to be admitted to their main campuses "unconditionally."

All state-assisted institutions require entering freshmen to participate in some form of assessment of their academic skills to be admitted. If testing indicates a need, these students are required to take below-college-level developmental education courses to obtain the necessary skills.

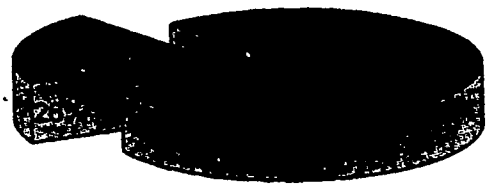
Studies indicate that the more comprehensive the developmental education program the more likely it promotes student success.

Studies indicate that the more comprehensive the developmental education program the more likely it promotes student success. Comprehensive programs include tutoring, counseling, and academic advising, above and beyond coursework. In the LOEO study, only half of the campuses which submitted graduation data offer all of the services of comprehensive developmental education programs.

The need for below-college-level courses

Most of the respondents surveyed by LOEO believe below-college-level courses are needed because high school students can graduate with only a ninth-grade level of proficiency and be accepted by a college or university. High school teachers interviewed by LOEO state that the high school curriculum is watered down and that there is very little emphasis on math and science in middle schools. Higher education respondents reported that below-college-level courses also are needed for nontraditional older students who are returning to college to refresh or upgrade their skills. Although respondents stated that all types of institutions should offer below-college-level instruction, some believe the majority of it should be provided by two-year institutions.

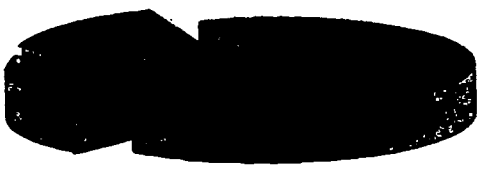
26% of all students are underprepared.



(on 25 campuses)

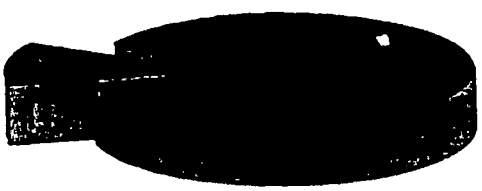
Of the 26% who are underprepared, most are 18-24 years old, female, and Caucasian.

Over half of the underprepared students had a college preparatory background.



(on 10 campuses)

Of the freshmen in LOEO's subsample, 14% had taken a college preparatory curriculum in high school and were enrolled in below-college-level courses.



(on 10 campuses)

Profile of students enrolled in below-college-level courses

To create a profile, data were separated according to students who took at least one below-college-level course (underprepared students) and those who took none (prepared students).

LOEO found that 26% of the students in our sample are underprepared. Students enrolled in below-college-level courses are typically 18-24 years old, female, and Caucasian. Approximately half of these are recent high school graduates. Moreover, although the majority of underprepared students are Caucasian, the data show that African-Americans and Hispanic-Americans are disproportionately represented.

Using data from 10 campuses who provided information on the high school backgrounds of their students, LOEO found that 56% of those enrolled in below-college-level courses had taken a college preparatory curriculum in high school. In total, 14% of all freshmen on these 10 campuses received a college preparatory background in high school and were enrolled in below-college-level courses in college. The state of Ohio is paying twice for the same type of instruction for these students.

Impact of below-college-level courses

The purpose of below-college-level courses is to improve students basic reading, writing, and math skills and to increase their chances of succeeding in college-level coursework and remaining in college. Consistent with national studies, LOEO found that below-college-level courses may have an impact on underprepared students' grade performance in English courses and short-term retention in college, but seem less effective in improving graduation rates.

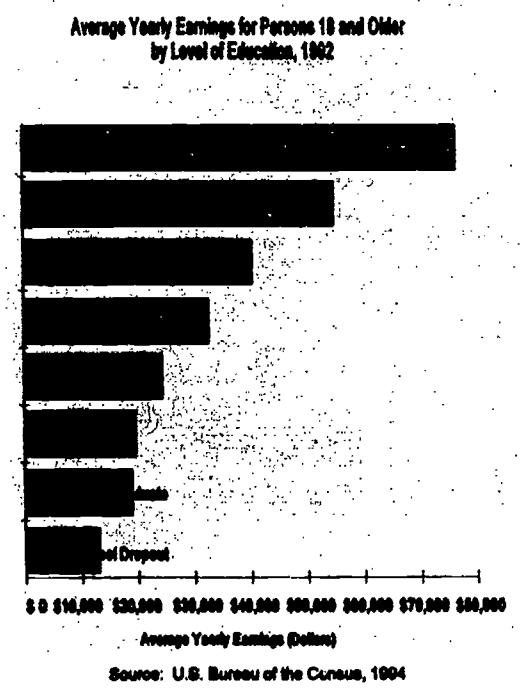
In their first college-level math courses, 78% of prepared students obtained grades of A-C, compared to 64% of underprepared students. For English courses, the figures were closer: 93% for prepared students compared to 87% for those underprepared.

Chapter I
Introduction

This LOEO report examines the issues surrounding higher education developmental education programs that support underprepared students to a level where they can succeed in college. Some Ohio legislators are concerned with high school graduates who need below-college-level instruction even after meeting college entrance standards.

A policy of broad access to public higher education has been supported in Ohio for the past several decades. Access has been achieved by building public institutions within commuting distance of virtually all Ohioans and providing some form of open admissions for Ohio high school graduates. A consequence of broad access is a diverse student population with a wide range of academic preparation.

Access to postsecondary institutions is important because education beyond high school has a direct impact on a person's future earnings and a state's economic success. The Census Bureau has recently confirmed the link between future income and level of education. Although Ohio provides access to higher education, the state's support is only about 80% of the national average.



Given that Ohio spends less than the national average on higher education, a critical question is whether the state should spend postsecondary resources on students who are underprepared for college. This report addresses the issues surrounding the "developmental education" programs that support underprepared students to a level where they can succeed in college.

"Remedial" and "developmental" instruction are terms that refer to higher education programs which help ease students' transition from high school to college or help older students re-enter an academic environment. Remedial instruction refers to reteaching skills that have been taught before and were either forgotten or never learned. In contrast, developmental instruction teaches skills and concepts to students who never had them.

Both remedial and developmental instruction consist of college-level courses (e.g., a refresher course in calculus for mathematics majors) and below-college-level courses (e.g., basic courses in reading, writing, or mathematics). This LOEO report focuses on the below-college-level component of both remedial and developmental instruction and student support services. Further detail about developmental education services is provided in Appendix A.

Developmental education programs may be necessary to help academically underprepared high school graduates, and older, returning students succeed in college. A 1992 national study on developmental education concluded: "developmental programs . . . have a positive impact on retention and success in later [college-level] courses." Advocates of developmental education do not believe offering these courses lowers academic standards. They describe these courses as the "Great Equalizer," allowing institutions to raise and maintain their standards without denying access to certain groups of students.

Concerns with developmental education

Similar to officials in other states, some Ohio legislators are concerned with traditional-age, high school graduates who need below-college-level instruction after meeting college entrance requirements. Analysis of test scores by American Collegiate Testing (ACT) shows a direct link between students who take a college preparatory high school curriculum and success in postsecondary education. In fact, as early as the mid-1980s, states such as California and Ohio had recommended that students complete a college preparatory curriculum to be admitted unconditionally to four-year universities. Yet, a substantial number of students with college preparatory backgrounds still are enrolling in developmental education courses in colleges and universities each year.

State policies on developmental education vary. Ohio, Colorado, Wisconsin, and California are among the states offering below-college-level courses at two- and four-year institutions. Some of these states are reviewing other options, such as raising high school graduation requirements, raising college entrance requirements, or restricting below-college-level courses to community and technical colleges.

Florida, Illinois, Iowa, and Minnesota restrict remediation to two-year institutions; Virginia recommended that four-year institutions eliminate remediation if a nearby community college can offer the courses; and four-year institutions in Arkansas reduced the number of remedial courses they offered. Oklahoma raised the entrance requirements at four-year institutions in 1993, and state officials are discussing whether high schools, colleges, or students should pay for college-level remediation. For the 1991-1992 academic year, the state of Louisiana estimated that the cost of providing remediation to elementary and high school students averaged about $52 per student, compared to an average cost of $267 for each underprepared college student.

History of developmental education

Academic assistance to prepare students for college-level work is as old as the first college in the United States. Harvard College opened in 1636 and began tutoring students who did not understand Latin, the language used to teach most courses in American colleges into the 18th century. By 1849, the University of Wisconsin had established the first developmental education program in response to growing numbers of underprepared students. According to the National Center for Education Statistics, by 1894 over 40% of entering college students in the United States were taking developmental education courses.

Enrollments in these programs dropped in the mid-1950s and rose again in the 1960s after the Higher Education Act of 1965 provided money for more students to attend college. Developmental education programs became more common in the 1970s in response to declining high school achieve-

ment levels, more underprepared students attending college, and the adoption of open admissions standards at public institutions. As of 1995, approximately 64% of four-year and 90% of two-year institutions across the country offer developmental education courses.

Developmental education funding in Ohio

LOEO intended to estimate the current cost of offering just the below-college-level portion of developmental education in Ohio and to determine if offering these courses is more expensive at two- or four-year institutions. However, the Ohio Board of Regents was unable to provide student enrollment and cost data specifically for below-college-level courses. The only available cost information is from an internal Regents staff report pertaining to developmental education programs as a whole for the 1990-1991 academic year.

At that time, developmental education courses offered for credit received state instructional subsidy funding, while noncredit courses were supported by a separate line item. In FY 1991, the state provided an estimated $15 million in instructional subsidy and slightly over $2 million in developmental education line item funding. Institutions used an additional $15 million of combined state, federal, and institutional funds to supplement the developmental education line item activities. Therefore, an estimated $32 million was available to Ohio's postsecondary institutions for developmental education for the 1990-1991 academic year. This amounts to 1.2% of their total instructional and general income for that year.

The developmental education line item was eliminated from the state budget in fiscal year 1993. Currently, the state provides only instructional subsidy funding for developmental education. Although study skills courses became subsidy eligible in FY 1992, other noncredit student support services such as tutoring and counseling receive no state funding.

Scope of the study

To examine the issues surrounding developmental education, LOEO addressed five questions:

1. What is the cost of below-college-level instruction at state-assisted institutions in Ohio?

2. Is Ohio paying twice for the same type of instruction—college preparatory courses in high schools and below-college-level coursework at universities and community and technical colleges?

3. What is the profile of students who enroll in below-college-level courses?

4. What are the retention and graduation rates of students enrolled in below-college-level courses?

5. Where should below-college-level courses be offered—at universities as well as community and technical colleges?

Methods

In addition to examining the professional literature and information on other states, LOEO collected three types of data:

1. Student demographic and performance data;
2. Developmental education faculty and course data; and
3. Opinions of educators regarding developmental education.

There are a total of 63 public postsecondary campuses in Ohio. Two of these are free-standing medical schools and are not the focus of this study. Another campus does not offer below-college-level courses. LOEO requested student data from the remaining 60 campuses.

LOEO was able to use student data from only 25 of the 60 campuses for two reasons: 11 campuses did not submit any student data; and 24 campuses did not provide totals for each category of student data, preventing the calculation of percentages.

To generate useful graduation rates, LOEO focused on the Ohio college graduates from the academic year, 1993-1994. Because the average student spends 5.5 years to attain a bachelor degree, we obtained data on freshmen entering four-year institutions in fall, 1989. Similarly, most students spend 3.5 years pursuing an associate or technical degree, so LOEO used data about freshmen entering two-year schools in fall, 1990.

Only 39 Ohio campuses have developmental education coordinators. These 39 became LOEO's sample of institutions for opinions about developmental education and information about its faculty and courses. If university regional campuses did not have their own developmental education coordinators, main campuses were asked to provide data for their regional campuses. Each college and university identified which of its developmental education courses are below-college-level.

We requested responses from two officials at each of the 39 campuses: the developmental coordinator and an official with a campus-wide perspective, such as a provost. LOEO received a total of 53 responses from these campuses. In addition, LOEO interviewed representatives from four state-level organizations: Ohio Board of Regents, Inter-University Council, Ohio Association of Community Colleges, and Ohio Association for Developmental Education. As a result, LOEO received a total of 57 responses from the higher education community. We also interviewed teachers from the ten public high schools with the highest proportion of students enrolled in below-college-level courses.

Limitations of the study

LOEO intended to obtain student demographic and performance data from all 60 campuses of state-assisted universities and colleges. However, the analyses for this study are from the 25 campuses that were able to provide the necessary data. Since these campuses were not randomly selected, conclusions in this report are limited to these 25 campuses and are not necessarily true for all state-assisted institutions. Moreover, virtually no state-assisted institution maintains all the data we requested for this study. Most institutions had to reconstruct the data from several sources. Therefore, the numbers presented in this report should be considered estimates.

LOEO's bibliography is provided in Appendix B.

Chapter II
Description of Ohio's Postsecondary Education System

This chapter describes Ohio's higher education system and explains how below-college-level instruction is provided. In addition, efforts to reduce the need for below-college-level instruction are reviewed.

Ohio's state-assisted higher education system includes 63 campuses: 13 universities, 25 university regional campuses, 15 community colleges, eight technical colleges, and two free-standing medical schools. The Ohio Board of Regents is responsible for planning and coordinating the higher education system.

Ohio Board of Regents' policies

To better prepare students for higher education, Regents recommended a college preparatory curriculum for high school students in 1981. The curriculum calls for four years of English, three years of mathematics, three years of social studies, three years of science, and two years of a foreign language. The Ohio Department of Education (ODE), the state agency responsible for overseeing elementary and secondary education, endorsed the recommendation. According to Regents, by 1987 all four-year universities had adopted the curriculum recommendation as an admissions requirement. No statewide college preparatory curriculum is specified for two-year institutions.

Although virtually all public institutions offer below-college-level courses, Regents believes two-year institutions should be primarily responsible for providing them. Several actions have advanced this philosophy.

In response to a General Assembly mandate, in 1990 Regents made student transfers among public institutions easier by adopting a statewide articulation policy. Transferring students receive credit for most of their previous work, although transfer credit is not given for developmental education courses. Some students prefer to begin their college education at smaller two-year institutions known for emphasizing teaching, with the intention of transferring to a university after one or two years.

A July 1992 report by the Managing for the Future Task Force, commissioned by the Ohio Board of Regents to study the higher education system, recommended:

> [C]ommunity colleges, working in the framework of a strengthened articulation and transfer mechanism, should become the principal open access points for higher education in the State and would have primary responsibility for developmental and remedial education.

In October 1993, Regents adopted nine service expectations for two-year colleges and regional campuses. These expectations were endorsed in Amended Substitute House Bill 152 of the 120th General Assembly. Two service expectations emphasize these institutions' responsibility for providing developmental education and for preparing students for the workforce. The service expectations reveal Regents' and the Ohio General Assembly's desire for two-year colleges and regional campuses to assume the primary role of serving

underprepared college students. The service expectations are listed in Appendix C.

Ohio's public postsecondary institutions

Ohio's state-assisted institutions vary in size from a small community college with 1,244 students to the largest university with over 55,000 students. In 1994, state-assisted institutions served more than 423,000 students. The mission of universities is to conduct research and teach; the primary mission of two-year institutions is to teach.

The state-assisted institutions are independent and autonomous; each determines its own admissions standards, course offerings, graduation requirements, and developmental education and other policies. There are similarities among institutions. However, the similarities usually are among two-year institutions as a group and among four-year institutions.

Admissions and student placement. All state-assisted institutions are subject to Ohio's "open admissions" law that requires high school graduates to be admitted to the public institution of their choice with certain exceptions. Institutions can require students to complete certain courses to be admitted "unconditionally." Students who have taken a college preparatory curriculum generally are admitted unconditionally.

Students who do not meet the college preparatory curriculum requirement are admitted to four-year institutions "with conditions." If testing indicates a need, these students are required to take below-college-level courses to obtain the necessary skills. Only Miami University requires academically underprepared students to attend the regional campuses for below-college-level instruction. As noted, community and technical college students are not required to take a high school college preparatory curriculum to be admitted.

Some state-assisted institutions have very lenient admissions standards. For example, to enter one university, seven community colleges, and four technical colleges, students do not need a high school diploma. At two of these institutions, this waiver is reserved for students age 21 and over or for part-time students.

All state-assisted institutions require entering freshmen to participate in some form of assessment of their academic skills to be admitted. Universities use student scores on the English, mathematics, reading, and science sections of the ACT or the SAT. Although most two-year institutions use similar sections of the ASSET test, some two-year institutions also use the ACT and SAT.

Some two- and four-year institutions use these tests in combination with institution-developed subject-area tests. "Cut-off scores" determine whether students enroll directly into college-level or below-college-level courses. These cut-off scores vary among all institutions, reflecting the different interpretations of what comprises college-level coursework.

Entering and exiting below-college-level courses. Each institution sets its own criteria for course enrollment for students whose placement scores indicate a need for below-college-level courses. Regents reports that most community and technical colleges prohibit students from enrolling in any college-level courses until they complete below-college-level coursework. Students admitted conditionally at universities are required to take one or more below-college-level courses before enrolling in college-level courses in the same subject area.

All state-assisted institutions in Ohio have similar policies regarding how a student successfully completes developmental courses. The policies can include passing a course with a grade of "C" or better, or passing a math, reading, or writing test at the end of the course.

Services for underprepared students. National studies show that the more comprehensive the developmental education program the more likely it promotes student success. Successful programs include tutoring, counseling, and academic advising above and beyond coursework; all of these services combined are likely to have the greatest positive impact on student success.

The average number of below-college-level courses offered at Ohio campuses is 7.3. Institutions average about four non-class activities, such as tutoring and learning laboratories. While technical and community colleges offer slightly more below-college-level courses, the differences in the average number of these courses taught at technical (7.5), community colleges (9), and universities (6.8) are small.

According to LOEO's survey, institutions consistently offer below-college-level courses in reading, writing, and study skills. Three fourths of those surveyed also offer pre-algebra and algebra courses as well as tutoring services. About half offer English courses including grammar, vocabulary, and spelling. Only two institutions offer special services for students with disabilities and only one offers English as a second language.

Some state-assisted institutions in Ohio offer developmental courses in an institution-wide unit, others have the courses in individual academic departments, while still others have them in both places. National statistics indicate that traditional academic departments are the most frequent providers of developmental education.

Course credit. Nationally, 20% of public and private colleges awarded some degree credit for developmental education courses in 1989, according to a 1992 Exxon Education Foundation study. All Ohio institutions only offer institutional credit that does not count toward degree completion, but simply becomes a part of a student's permanent record.

Officials explained that in order to qualify for financial aid, students must meet full-time enrollment status. Institutional credit ensures that developmental education students have full-time status. Nationally, 75% of the students participating in developmental programs at four-year institutions and 40% of the students at two-year institutions received financial aid in 1992.

Faculty teaching below-college-level courses. Approximately 610 faculty teach below-college-level courses at the campuses in LOEO's sample. The majority of these faculty statewide (66%) are at the lowest ranks of the teaching faculty: adjunct professors, lecturers, teaching assistants, or others lower in rank. Adjunct or lower-ranked faculty are the majority at universities (71%), community colleges (70%), and regional campuses (59%). Adjunct professors or lower ranked faculty are less than half (47%) of all the faculty teaching below-college-level courses at technical colleges.

Developmental education program evaluations. Although Ohio institutions report conducting some form of evaluation of their developmental education programs, a Regents' 1991 internal report notes, "very few institutions conduct consistent follow-up studies of students completing developmental programs or track the students to completion of their educational goals."

A 1992 national Exxon Education Foundation study also concluded that very few institutions properly evaluate developmental education programs. The study

concluded that most institutions rely on information such as student evaluations and analysis of course grades or course completion rates. Consideration of whether developmental education students graduate was rarely a part of evaluation efforts.

Efforts to reduce the need for below-college-level instruction

There are six statewide programs designed to reduce the need for below-college-level instruction. Three of these programs are described below and three are detailed in Appendix D.

Early Mathematics Placement Test (EMPT). This program assesses the preparation of high school juniors for college-level mathematics. By testing high school juniors, students can take additional math courses during their senior year to increase their math skills. Approximately 500 Ohio high schools (53%) participated in the program in the 1992-1993 academic year, and about 50,000 high school students were tested. Based on a recent study by a Ph.D. student from The Ohio State University, the EMPT program may contribute to high school students performing better in college-level mathematics than students who have not participated in the program.

The Early English Composition Assessment Program (EECAP). Similar to EMPT, this program identifies students' writing strengths and weaknesses early in high school relative to college standards. EECAP promotes collaboration between college and secondary school English staffs to develop methods for teachers to evaluate students' writing. Approximately 40 Ohio colleges and universities have participated in this program since it began in 1984.

Tech Prep. These are competency-based programs coordinating the instruction offered in high schools and higher education institutions, often including experience in a particular occupation. Each Tech Prep program requires proficiency in a common core of mathematics, science, communications, and technology. Tech Prep provides students with the advanced skills necessary to enter technical occupations by the end of a two-year postsecondary degree or an apprenticeship program. Tech Prep programs target general education track students, and attempt to provide expanded opportunities for college preparatory and vocational education students.

Postsecondary and high school efforts. Five of the 10 teachers LOEO interviewed described programs and activities in their schools designed to prepare students for college-level work. These include: tutoring programs, computer-assisted remedial activities, visits to local colleges, and high school classes taught by local college staff.

Individual higher education institutions engage in the following activities: math and reading tutoring; collaboration with elementary and secondary schools to clarify the classes students need for college; providing area high schools with test profiles of their students; faculty collaborating with high schools for curriculum development and teaching strategies; and career awareness day. Some institutions also mentioned Upward Bound, a program that supplements high school curricula and builds students' academic skills and motivation to attend college.

Chapter III
The Need for Below-College-Level Courses

Most of the respondents surveyed believe below-college-level courses are needed because high school students are underprepared for college-level work. Although respondents stated that all types of institutions should offer below-college-level instruction, they also believe the majority of it should be provided by two-year institutions.

This chapter reports the answers to three LOEO questions from its 67 respondents:

1. Why are below-college-level courses needed in Ohio?

2. Which types of higher education institutions (universities, regional campuses, community, or technical colleges) should offer below-college-level courses?

3. Should there be one statewide standard defining college preparedness?

The need for below-college-level courses

Most of the respondents surveyed by LOEO believe below-college-level courses are needed because high school students can graduate with only a ninth-grade level of proficiency and be accepted by a college or university. Exhibit 1 lists the most frequent reasons given for students being underprepared.

Exhibit 1
Why Are College Freshmen
Underprepared for College-Level-Work?

Higher Education Institutions, Associations, and Regents (N=57)	High School Teachers (N=10)
Students take general track courses making them underprepared for college.	Inadequate middle and high school instruction.
State high school graduation test requires only a ninth-grade proficiency.	Low college and university admissions standards.
University and college open admissions policies.	High school students place a low priority on academics.

Higher education respondents added that many high school students do not meet the prerequisites for technical programs that require math or science. They reported that below-college-level courses also are needed for nontraditional older students who are returning to college to refresh or upgrade their skills.

High school teachers stated that the high school curriculum is watered down, and that there is very little emphasis on math and science in middle schools. Teachers insist that students enter high school without the basic skills they should have learned in grades K-8 and that more middle school teachers need to be certified in math and science.

Institutions that should offer below-college-level courses

Most higher education respondents (67%) believe two- and four-year institutions should offer below-college-level courses. In their opinion, with institutions located in every geographic location in the state offering these courses, student access to higher education increases. Although the remaining respondents believe that all types of institutions should offer below-college-level courses, they also believe that students with extensive developmental needs are better served at two-year institutions than university main campuses. Regents staff claim that most academically underprepared students enroll themselves in two-year institutions to improve their skills before transferring to four-year campuses.

Two-year institution respondents believe that part of their institutions' mission is to increase access to college for underrepresented populations who also may be academically underprepared. Without below-college-level courses at two-year institutions, these respondents believe that enrollment of underrepresented populations and the ability to effectively serve them would be significantly reduced.

Responses from the 10 high school teachers to the question of which types of postsecondary institutions should offer below-college-level courses were mixed. The respondents citing community and technical colleges stated that these institutions should prepare students for college-level work before students enter university main campuses.

Statewide standard defining college preparedness

Since the early 1980s, Ohio has had a recommendation regarding the number of courses comprising a college preparatory curriculum in high school and a list specifying the knowledge and skills that should be learned in these courses. However, there is no evidence that these specifications serve as a common standard for what is taught in Ohio high schools.

Eight of the 10 high school teachers surveyed favored a statewide standard because it would create a consistent approach for students preparing for college and cause them to become more serious about high school academics. In contrast, the higher education respondents contend that there is too much variation within and among institutions to create a single standard.

Another reason respondents believe a statewide standard would not work is that institutions have different missions, requirements, majors, and admit students with different profiles. As a result, they feel individual institutions are in the best position to determine which students are prepared for work on their campuses. In addition, they stated that having a single standard would be a barrier to college for some students. For

example, two high school teachers added that a single standard would harm urban students who do not receive the same quality education as suburban students; and any standard should be tied to high school graduation rather than college entry.

In sum, many high school students are underprepared for college-level-work because they can graduate with only a ninth-grade level of proficiency and without placing a priority on academics. Because of low entrance standards, these students can still be accepted at some state-assisted institutions. However, since the 1993-1994 school year, senior high school students have had the opportunity to take Ohio's Twelfth-Grade Proficiency Test, which assesses their skills at a twelfth-grade competency level. Results from this test may cause school officials to make changes in the curriculum to better prepare future students for college.

Chapter IV
Profile of Students Enrolled in Below-College-Level Courses

*Typical freshmen students enrolled in below-college-level courses are ages 18 to 24, female, and Caucasian. LOEO found that 14% of all freshmen students received a college preparatory background in high school **and** are enrolled in below-college-level courses in college. The state of Ohio is paying twice for the same type of instruction for these students.*

To create a profile of freshmen students who were enrolled in below-college-level courses, the data from 25 reporting campuses were separated according to students who took at least one below-college-level course ("underprepared students") and those who took none ("prepared students"). For some analyses, the data were separated into groups of students who followed a college preparatory curriculum in high school and students who did not.

Ohio's underprepared college students

National and state studies examining different cohorts of college freshmen show that 30% to 60% of college freshmen take at least one below-college-level course. A 1992 national study by the National Center for Education Statistics estimated that 30% of all college freshmen took at least one below-college-level course in the fall of 1989.

LOEO found that more than one-fourth (26%) of freshmen in reporting Ohio campuses have taken below-college-level courses. Of the 8,540 students in our sample, half were enrolled at four-year institutions and half were enrolled at two-year institutions. The percentage of the freshmen class varies, however, by type of institution. A greater percentage of freshmen are underprepared at technical colleges (49%), regional campuses (38%), and community colleges (34%), than at four-year universities (20%). Exhibit 2 compares these percentages with the freshman population at the four types of institutions.

Exhibit 2
Enrollment in Below-College-Level Courses
By Type of Institution

Institution Type	Number of total freshmen	Percent of total freshmen	Number of freshmen taking below-college-level courses	Percent of freshmen taking below-college-level courses
University Main Campuses (5)	21,382	66%	4,231	20%
Regional Campuses (12)	4,035	12%	1,537	38%
Community Colleges (4)	5,150	16%	1,760	34%
Technical Colleges (4)	2,062	6%	1,012	49%
All Campuses (25)	**32,629**	**100%**	**8,540**	**26%**

LOEO compared the characteristics of underprepared freshmen with the characteristics of all freshmen. The age and gender profile of underprepared freshmen does not differ remarkably from the profile of all freshmen. The ages of students in both groups are similar, although underprepared students contain a slightly larger proportion of females.

When considering race, however, the percentage of underprepared African-American and Hispanic-American freshmen is twice that of African-Americans and Hispanic-Americans in the entire freshman population. Exhibit 3 illustrates these comparisons.

In addition, the distribution of males and females varies by type of institution. At community colleges, 55% of the freshmen are female. However, 62% of the freshmen taking below-college-level courses are female.

Exhibit 3
Profile of College Freshmen
(1988-1989 and 1990-1991 academic years)
for 25 Ohio Campuses

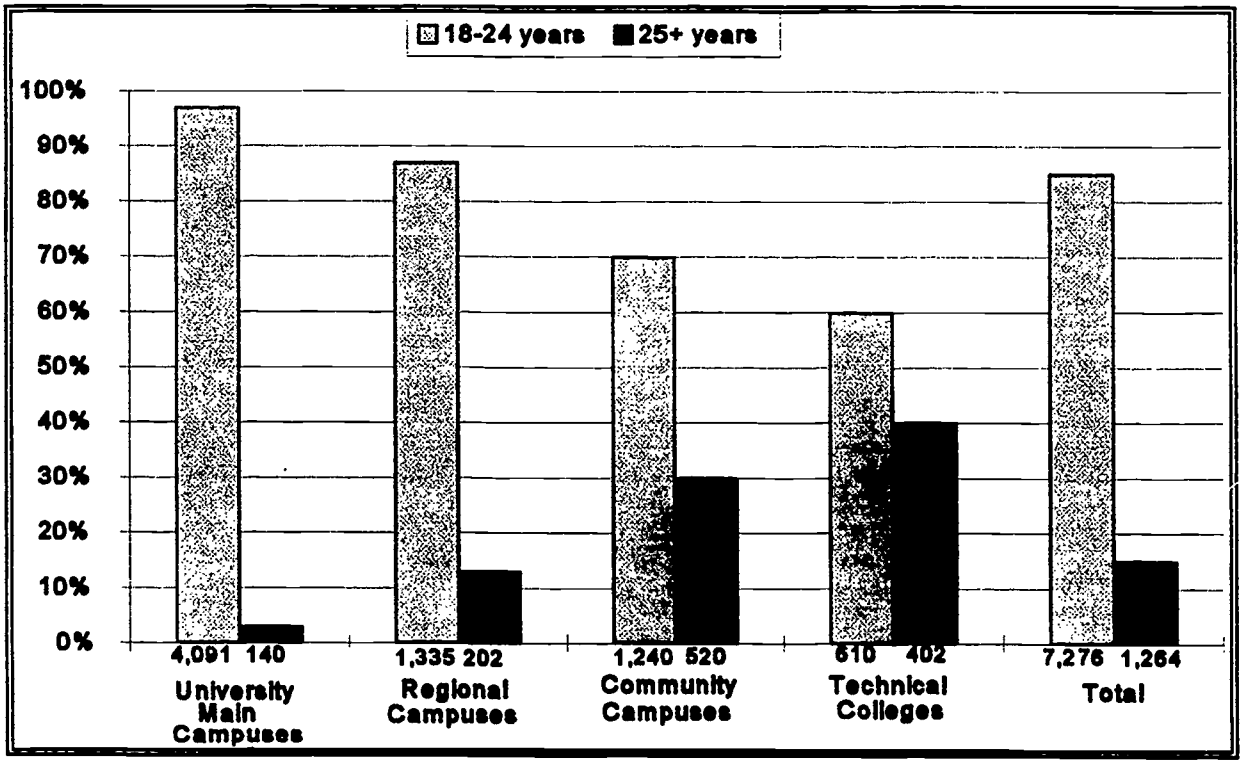
	All Freshmen	Underprepared Freshmen
Age	87% ages 18-24 4-year: 97% 2-year: 70%	85% ages 18-24 4-year: 97% 2-year: 74%
Gender	53% Female 47% Male	57% Female 43% Male
Race	89% Caucasian 6% African-American 1% Hispanic-American 1% Asian-American	83% Caucasian 12% African-American 2% Hispanic-American 0.6% Asian-American

Note: Students with disabilities accounted for less than 1% of each population.

There is a belief that developmental education primarily serves older students. In LOEO's sample of 25 Ohio campuses, however, 85% of the students who took below-college-level courses were between the ages of 18-24 as freshmen. Further analyses indicate that approximately half of these freshmen had recently graduated from high school.

There are more underprepared older students enrolled at technical (40%) and community (30%) colleges than at regional campuses (13%) and universities (3%). Exhibit 4 illustrates these distributions.

Exhibit 4
Ages of Students in Below-College-Level Courses for 25 Ohio Campuses



LOEO's information on college students' high school background came from 10 campuses who reported data from the American Collegiate Testing (ACT) exam. These data are from recent high school graduates only and are self-reported by students. Over half (56%) of the underprepared students at these 10 campuses had studied a college preparatory curriculum in high school. When considering all of the recent high school graduates at these 10 campuses, an estimated 14% had taken a college preparatory curriculum in high school and had enrolled in below-college-level coursework.

Consistent with Ohio's college preparatory curriculum recommendation, over 90% of the underprepared students had taken four years of English and three years of mathematics in high school. More underprepared female students (12%) reported taking less than three years of math in high school than underprepared male students (8%).

In summary, in the LOEO sample, students 18 to 24 are the largest proportion of those classified as underprepared. Students, ages 25 and older, account for 15%. The LOEO data also show that half of the underprepared students attend four-year universities and half attend two-year institutions.

Although the majority of underprepared students enrolled in below-college-level courses are Caucasian, the data show that African-Americans and Hispanic-Americans are disproportionately represented. This is consistent with the findings of national studies. Most importantly, however, is that 14% of all recently graduated freshmen students in the LOEO subsample received a college preparatory background in high school and are enrolled in below-college-level courses in college. The state of Ohio is paying twice for the same type of instruction for these students.

Chapter V
Impact of Below-College-Level Courses

The purpose of below-college-level courses is to improve students' basic reading, writing, and math skills and to increase their chances of succeeding in college-level coursework and remaining in college. Consistent with national studies, LOEO found that below-college-level courses seem to improve some underprepared students' grade performance in later courses and short-term retention but seem less effective in improving graduation rates.

Three factors are used in this chapter to assess the impact of below-college-level instruction: the percentage who earned a grade of "C" or better in their first college-level English or math course; the percentage still enrolled in college after one year; and the percentage who graduated. Underprepared college students are compared to their prepared counterparts with these three factors.

First college-level coursework

In LOEO's sample of 25 campuses, a greater percentage of prepared students received a grade of "C" or better in their first college-level math and English courses than underprepared students. The difference between these two groups is larger for math than English. In math, 78% of prepared students received a grade of "C" or better compared to 64% of underprepared students. However, in English 93% of the prepared students received a grade of "C" or better compared to 87% of underprepared students.

Exhibit 5 displays the grades of prepared and underprepared students in their first college-level courses across the four types of institutions. The discrepancies are most apparent at regional campuses and technical colleges in mathematics. Moreover, only about half of the underprepared students at regional campuses are succeeding in their first college-level math course compared to two thirds at other institutions.

Exhibit 5
Students Receiving Grades A to C on 25 Ohio Campuses

	Math		English	
	Prepared	Underprepared	Prepared	Underprepared
	A to C	A to C	A to C	A to C
University Main Campuses (5)	78%	66%	95%	89%
Regional Campuses (12)	75%	52%	91%	85%
Community Colleges (4)	75%	67%	89%	87%
Technical Colleges (4)	85%	64%	93%	87%
All campuses (25)	78%	64%	93%	87%

Student retention

Overall, at the 25 reporting campuses, a greater percentage of prepared (65%) than underprepared (57%) freshmen students were still enrolled in college through the fall of their sophomore year. Retention rates were not very different by race, but did differ by age group. (See Exhibit 6.)

Prepared students. For prepared students at all reporting campuses, only about one fourth of those 25 and older were retained, compared to nearly three fourths of 18 to 24 year olds. This disparity between age groups is most noticeable at university main and regional campuses.

Underprepared students. Within each type of institution, underprepared students 25 and older were retained at comparable rates to underprepared students 18 to 24.

Prepared versus underprepared students. Surprisingly, across and within institutions, underprepared older students were consistently retained at substantially higher rates than prepared students the same age. Apparently, older students who have been out of school for a period of time are able to be retained in college when they enroll in below-college-level courses to correct academic deficiencies.

National statistics indicate that the majority of developmental education students enrolled at both two- and four-year institutions were retained through their first year. Two 1983 studies found that developmental education programs improved students' grade-point averages and short-term retention.

Exhibit 6
Retention of Prepared and Underprepared Students by Age

		Prepared		Underprepared	
		18-24 (21,231)	25 & older (2,858)	18-24 (7,276)	25 & older (1,264)
University Main Campuses	(5)	79%	34%	67%	62%
Regional Campuses	(12)	49%	26%	52%	51%
Community Colleges	(4)	27%	17%	25%	27%
Technical Colleges	(4)	57%	49%	56%	57%
All campuses	(25)	70%	[illegible]	[illegible]	44%

Graduation rates by age

LOEO could not calculate graduation rates for regional campuses and community colleges. Some students begin college at regional campuses and community colleges intending to transfer to a university after one or two years. In addition, two-year institutions serve a substantial student population who take a few courses with no intention of seeking a degree or of graduating. The absence of a higher education system-wide database prevented LOEO from tracking transfer students or distinguishing degree-seeking students from occasional ones.

LOEO calculated graduation rates for the universities and technical colleges in our sample. The data show a substantial drop-off between students retained after one year and those graduating, even for prepared students. (Universities have 79% retained and 54% graduating; technical colleges have 57% retained and 27% graduating.)

The results from technical colleges indicate very low graduation rates for all students. However, similar to students attending regional campuses and community colleges, students enroll in technical colleges for a number of reasons including preparing for technical careers, developing academic skills for transfer to universities, upgrading job-related skills, or pursuing personal enrichment interests.

Regarding students ages 18 to 24, more prepared students at universities graduated within 5.5 years (54%) than underprepared ones (35%). Similarly, more prepared technical college students graduated within 3.5 years (27%) than their underprepared counterparts (20%).

When comparing ages, graduation rates were higher for 18-24 year old students than for students 25 and older, whether or not they were prepared or underprepared when they entered college. Unexpectedly, however, the relatively few underprepared university students 25 and older graduated at a higher rate than prepared students the same age. Similar to the retention data presented above, these graduation rates may suggest that below-college-level courses are critical for students ages 25 and older to succeed, at least at universities. Exhibit 7 shows these results.

Exhibit 7
Graduation Rates for Prepared and Underprepared Students by Age
University Main Campuses and Technical Colleges

	Prepared				Underprepared			
	18-24		25 & older		18-24		25 & older	
University Main Campuses (5)	16,633	54%	518	9%	4,701	35%	542	24%
Technical Colleges (4)	548	27%	502	20%	610	22%	402	17%

Graduation rates by race

Exhibit 8 shows the graduation rates for African-American and Caucasian students. Prepared students from both races graduated at a higher rate than underprepared students. Surprisingly, however, underprepared Caucasian students graduated at a higher rate than both prepared and underprepared African-American students.

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Exhibit 8
Graduation Rates of Prepared and Underprepared Students By Race
University Main Campuses and Technical Colleges

	Prepared	Underprepared
African-Americans	31%	20%
Caucasians	54%	39%

Note: Students of other races, such as Native-Americans, Asians and Pacific Islanders, and Hispanic-Americans, were too few to report. Only a small percentage were enrolled in the five university main campuses and four technical colleges in the LOEO sample and an even smaller percentage were enrolled in below-college-level courses.

A number of factors beyond academic performance may influence whether a student remains in college until graduation. Ohio's relatively high tuition may affect graduation rates as much as decisions to transfer to other institutions, changes in career goals, poor health, or financial hardship. Therefore, it is unrealistic to attribute student success or lack of success solely to below-college-level developmental education programs.

However, national studies argue that the more comprehensive the developmental education program the higher the retention and graduation rates are likely to be, particularly for students taking below-college-level courses. Comprehensive developmental education programs should include counseling, tutoring, and academic advising, as well as coursework; all of these services combined are likely to have the greatest positive impact on student success in higher education. Only half of the campuses for which LOEO had graduation data provide comprehensive services. This could be reflected in the low graduation rates.

According to national studies, the poor retention and graduation rates for African-Americans and other minorities could be the result of the lack of specific services geared to retaining and graduating them. Appendix E describes the services which have been found to be especially effective in helping minorities succeed in higher education.

In summary, national studies show that below-college-level developmental education courses appear to improve some underprepared students' first college-level course performance and short-term retention but seem to be less effective in improving their graduation rates. Data from LOEO's

sample seem to be consistent with these findings.

Student age does affect these results, however. Underprepared students ages 25 and older were retained at higher rates than prepared students the same age at every type of institution. Furthermore, underprepared older students at universities graduate at a higher rate than prepared older students. Below-college-level courses may play an important role in retaining and graduating these relatively few older students.

Chapter VI
Conclusions and Recommendations

Postsecondary education is no longer a luxury but a necessity. Without some postsecondary education, high school graduates are destined for low paying jobs, which translates into an economic loss for the state of Ohio. Postsecondary developmental education programs are designed to help increase students' success in college. These programs serve students with a range of academic skills, from college-level to below-college-level.

Student profile

Of the freshmen entering the 25 state-assisted colleges and universities in the LOEO sample, over one quarter (26%) were underprepared for college-level work.

Using data from 10 campuses who provided information on the high school backgrounds of their students, LOEO found that 56% of those enrolled in below-college-level courses had taken a college preparatory curriculum in high school. In total, 14% of all freshmen on these 10 campuses received a college preparatory background in high school and were enrolled in below-college-level courses in college. The state of Ohio is paying twice for the same type of instruction for these students—a college preparatory curriculum in high school and below-college-instruction in college.

LOEO data show that the profile of students enrolled in below-college-level courses is not much different from their more prepared counterparts. The typical underprepared student is 18 to 24, female, and Caucasian. Students ages 18 to 24 are the largest proportion of those enrolled in below-college-level courses. Furthermore, approximately half of them are recent high school graduates.

In addition, of the students enrolled in below-college-level courses half attended main campuses of four-year universities and half attended two-year institutions. This profile from the LOEO sample contradicts the belief that most underprepared students attend two-year institutions.

Retention and graduation

A greater percentage of prepared (65%) than underprepared (57%) students was retained in college through the fall of their sophomore year. In addition, a larger percentage of prepared 18 to 24 year old students was retained than prepared 25 and older students. This disparity between age groups is most apparent at university and regional campuses. Surprisingly, however, a larger percentage of underprepared than prepared students 25 and older was retained at every type of institution. Below-college-level courses appear to play an important role in retaining this group of students.

Regarding graduation rates, younger students graduated at a higher rate than older students, whether they were prepared or underprepared when they entered college. Unexpectedly, however, underprepared students 25 and older at universities graduated at a higher rate than prepared students in the same age group. Similar to the retention rates for this age group, these graduation rates may suggest that below-college-level courses are critical for the small number of students ages 25 and older to succeed, at least at universities.

Prepared and underprepared Caucasians were retained and graduated at substantially higher rates than even prepared African-American students. National studies indicate that this may be due to two reasons:

a lack of comprehensive developmental education services at two-year institutions where many minorities attend; and a lack of services targeted to retaining and graduating minorities at all types of institutions.

The more comprehensive the developmental education program, the higher the retention and graduation rates, particularly for students taking below-college-level courses. Only half of the campuses for which LOEO had graduation data provide comprehensive programs. This could be reflected in the low gradation rates, particularly for minorities.

According to national studies, developmental education programs seem to improve students' grade point average and short-term retention but seem to be less effective in improving graduation rates for underprepared students. However, beyond academic performance, a number of other factors can influence whether a student remains in college until graduation. Therefore, it is unrealistic to attribute student graduation solely to below-college-level developmental education programs.

Offering below-college-level services

Most respondents interviewed by LOEO believe that developmental education should be offered at all types of institutions. However, they also believe that students with extensive below-college-level needs should have them addressed at two-year institutions before they enroll in universities.

Regents reported that institutions spent an estimated $32 million for all developmental education programs for the 1990-1991 academic year. LOEO intended to estimate the current cost of providing only the below-college-level portion of developmental education, but could not because of a lack of data. Regents does not collect enrollment or cost data tied to a specific type of instruction, such as below-college-level courses. Nor do they collect student retention and graduation data. A system-wide, integrated database would provide this information.

Regents is currently developing an integrated database system that links student, faculty, course, and financial information. Although the design of the system has not been finalized, Regents' goal is to be able to evaluate the effectiveness of individual academic programs and the higher education system as a whole. The system is about two years from completion.

Ohio's higher education and K to 12 system has several programs that prevent some students from needing below-college-level instruction. Other aspects of the system could be modified, however, to reduce the percentage of students enrolling in these courses and improving the system's capabilities of serving students that do. These modifications are described in the following recommendations.

Recommendations

Providing below-college-level instruction is more consistent with the missions of two-year institutions than four-year universities. With every state-assisted college and university offering below-college-level instruction, state funding for this purpose is dispersed. By targeting state funding, particular institutions would have the resources they need to provide the comprehensive developmental education services necessary to effectively address the needs of underprepared students. Moreover, of the underprepared students who attended the university main campuses in the LOEO sample, only 35% graduated compared to 54% of their prepared counterparts.

LOEO recommends:

- **The Ohio Board of Regents should** encourage underprepared students to complete their below-college-level work at regional campuses and two-year colleges before being admitted to main campuses of four-year universities. This policy could be accomplished by not providing instructional subsidy or other state funding for below-college-level courses at university main campuses. An exception could be made for geographic areas where no two-year colleges are available.

  This recommendation is consistent with the Ohio Board of Regent's effort to target the missions of different institutions and with their service expectations for two-year colleges and regional campuses.

*****

The data examined for this study raise concerns about the expectations for performance in Ohio high schools. In the LOEO sample, 56% of the students taking below-college-level courses had taken a college preparatory curriculum in high school. In addition, half of the students in technical colleges required below-college-level instruction. Furthermore, there is an ongoing concern with the academic rigor of high schools' vocational and general tracks.

Current high school graduation requirements and the Ohio Board of Regents recommended curriculum for college acceptance refer to the number of courses students must take in each subject area; they do not emphasize what the students must know or be able to do as a result of these courses. Given the variation of what is expected in Ohio's high schools and what is included in their courses, a more detailed and uniform standard is necessary.

LOEO recommends:

- **Ohio's secondary schools increase their** academic preparation of students by expecting that all students who intend to enter higher education institutions are able to accomplish the learning outcomes of the Twelfth Grade Proficiency Test. These learning outcomes specify the knowledge and skills necessary for competence in reading, writing, mathematics, citizenship, and (in 1996) science. Students passing this test will be prepared for freshman-level college courses at both two- and four-year institutions.

- **Ohio's four-year universities require** Ohio high school graduates to pass the Twelfth Grade Proficiency Test as a condition for acceptance to their main campus.

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There are a number of statewide programs designed to reduce the need for below-college-level instruction and better prepare students for college. However, a larger number of students could be served by these programs. Currently, two of these programs, Tech Prep and Project Discovery, are undergoing national and state evaluation of their effectiveness.

LOEO recommends:

- **The Early Mathematics Placement Test,** the Early English Composition Assessment Program, and the Dwight D. Eisenhower Program be evaluated to see if they are effectively accomplishing the purposes for which they were designed. Based on these national and state

evaluations, the Ohio Board of Regents and the Ohio Department of Education should seek additional funding to expand the programs considered effective to more students, teachers, schools, and higher education institutions.

* * * * *

Data for this report show that African-Americans and Hispanic-Americans are disproportionately represented in below-college-level developmental education courses. The data also show that Caucasian students who took below-college-level courses graduated at a higher rate than both prepared and underprepared African-American students. Moreover, national studies argue that the more comprehensive the developmental education services, the more likely developmental education students will succeed in college.

LOEO recommends:

- **The Ohio General Assembly reestablish** line item funding for developmental education to help ensure that all institutions offer comprehensive support services, including counseling, tutoring, and academic advising. The line item will also help institutions offer services targeted specifically to retaining and graduating minorities. Four-year institutions should receive line item funding for college-level services only; two-year institutions should receive it for both college-level and below-college-level support services.

* * * * *

The Ohio Board of Regents' lack of system-wide data about faculty, students, courses, and finances was very evident in the implementation of this study. It is not possible to evaluate the effectiveness of individual programs or the higher education system as a whole without a comprehensive, system-wide database. Regents is currently developing this type of system.

- **The Ohio General Assembly continue** to fund and encourage the earliest possible completion of the higher education Uniform Information System.

- **The higher education Uniform Information System** and elementary and secondary's Education Management Information System be linked. This will allow elementary, secondary, and higher education to be viewed and evaluated as one "system" and will allow smoother and more successful student matriculation from one level of education to another.

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Appendices

APPENDIX A
Description of Developmental Education

"Developmental Education" is a broad term referring to higher education programs, courses, and services which help ease students' transition from high school to college or help older students re-enter an academic environment. Occasionally, developmental education is referred to as "remedial." Strictly speaking, "remedial" instruction refers to reteaching skills that have been taught before and were either forgotten or never learned. In contrast, "developmental" instruction teaches skills and concepts to students who never had them.

The following is a list of developmental education courses and student support services.

Courses	Support Services
English	Study Skills instruction
Pre-algebra	Tutoring
Algebra	Specialized advising
Reading	Counseling
Biology	Learning laboratories
Chemistry	
Pre-Calculus (college-level)	
Study skills/orientation	

Description of student support services

Instruction in study skills includes such topics as how to properly develop an outline. Specialized advising provides academic direction on the courses students should take and tends to be provided to underprepared (below-college-level) students. Learning laboratories can be provided as part of a course (e.g., a chemistry or biology lab) or as stand-alone services such as a writing or mathematics laboratory.

Appendix B
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APPENDIX C
Service Expectations for Two-Year Colleges and Regional Campuses

The Managing for the Future Task Force recommended to the Ohio Board of Regents that one of the best ways to increase access to, and improve the quality of, the postsecondary education system is to reorganize two-year campuses into a comprehensive community college system. Regents agreed with the goals of the task force but not the means of reaching them.

To accomplish the goals, Regents reinforced "the concept of a two-year college system that is based on a service principle, not an organizational one." Consequently, Regents proposed nine service expectations for all two-year campuses. According to Regents, "the service expectations are designed to embrace the unique mission and role of each campus, and to provide a method for evaluating how effectively each campus is meeting its community's or service area's needs." Two-year institutions are to provide:

1. A range of career and technical programs that prepare individuals for employment in technical or paraprofessional careers;

2. A commitment to an effective array of developmental education services providing opportunities for academic skill enhancement;

3. Partnerships with industry, business, government, and labor for retraining the workforce and the economic development of the community;

4. Noncredit continuing education opportunities;

5. College transfer programs or the initial two years of a baccalaureate degree for students planning to transfer to institutions offering baccalaureate programs;

6. Linkages with high schools to ensure that graduates are adequately prepared for postsecondary programs;

7. Student access to conveniently scheduled, quality, affordable programs;

8. Student fees [that] are as low as possible, especially if the institution is supported by a local tax levy; and

9. A high level of community involvement in the decision making process in such critical areas as course delivery, range of services, fees and budgets, and administrative personnel.

Regents will identify strategies for linking two-year institutions' funding to their performance on these nine service expectations during the 1995-1997 instructional subsidy consultation.

APPENDIX D
Programs to Reduce the Need for Below-College-Level Instruction

In addition to the Early Math Placement Test, The Early English Composition Assessment Program, and Tech Prep, there are another three state programs designed to reduce the need for below-college-level instruction.

The Dwight D. Eisenhower Program

This is a federally funded program begun in 1984 that promotes collaboration between college and university mathematics and science faculty and elementary and secondary teachers. The goal is to improve the quality of mathematics and science instruction in public and private elementary and secondary schools.

Federal dollars flow to the Ohio Department of Education and to Ohio Board of Regents, who in turn distribute the money to colleges and universities and to elementary and secondary schools to pay program costs. Major goals of the program are to increase the number of mathematicians and scientists, to improve literacy in these disciplines, and to encourage underrepresented populations such as minorities and women to study these subjects.

Project Discovery

This program, sponsored by the National Science Foundation and the state of Ohio, links middle and high schools, colleges, and universities together on a regional basis to improve the quality of teaching and learning of math and science at all levels. Currently, the Ohio program focuses on middle schools. The program includes a plan to increase public understanding of the importance of math and science education for Ohio's economic future.

University and College Remedial Course Enrollments in Mathematics and English Report

The Ohio State University conducts an annual survey for Regents that identifies by high school the percentage of students enrolling in below-college-level mathematics and English at Ohio's public higher education institutions. The analysis is limited to college freshmen who graduated from high school the previous spring and to courses in math and English. The study is provided to participating high schools who use it to determine why their former students needed below-college-level coursework. This information could lead to changes in participating high schools' curriculum or other services to prevent future students from having to take below-college-level coursework. The survey is in its sixteenth year.

APPENDIX E
Strategies for Retaining and Graduating Minorities Attending Ohio Colleges and Universities

Minorities, particularly African-Americans and Hispanic-Americans, have the lowest retention and graduation rates at predominantly white community colleges and public four-year institutions. They have the highest retention and graduation rates at private four-year institutions and research universities. In Ohio, underprepared Caucasian students who took below-college-level courses graduated at higher rates than even African-American students prepared for college.

National studies show that comprehensive postsecondary developmental education programs have the greatest impact on student success in higher education. This is particularly true for students enrolled in below-college-level developmental education courses where minorities are disproportionately represented. However, other efforts, when combined with comprehensive developmental education program services, can increase minority retention and graduation at predominantly white public institutions.

Some minorities do not graduate because they are academically underprepared for college. However, this was found by several studies to be a minor cause for minorities not graduating. Studies concluded that low minority retention and graduation are more a result of factors other than their academic preparation. Minority students who are strong in these areas are likely to succeed in college, while others are likely to dropout:

- positive self-concept;
- realistic self-appraisal of academic strengths and weakness;
- capacity to understand and deal with racism;
- ability to establish long-term goals and short-term objectives;
- availability of support persons or structures;
- successful leadership experiences in traditional or nontraditional roles;
- demonstrated community service; and
- capacity to acquire knowledge in traditional or nontraditional ways.

Four factors contribute to minority attrition:

- lack of understanding of the expectations and the reward system in higher education;
- lack of support for adjustment to college;
- lack of adequate financial aid; and
- lack of assistance to remedy whatever academic underpreparedness that may exist.

Feelings of alienation experienced by African-American students on predominantly white campuses may cause them to avoid the programs designed to help them succeed. As a result, the effects of underpreparedness can become worse and less likely to be addressed than for white students.

Institutions' programs and policies

Postsecondary institution officials can answer eight questions to determine whether their institutions' program features, policies, or procedures support minority participation:

1. Do developmental courses include topics relevant to minority students?
2. Are minorities represented among program faculty and staff?
3. Are services conducive for students to "drop in" and participate in program activities?
4. Does the program have a positive relationship with minority organizations on campus?
5. Do program faculty and staff interact regularly with minority faculty and staff on campus?
6. Are diversity issues discussed at staff meetings?
7. Do program publications feature photographs of minority students?
8. Are minority programs and services discussed in program orientation activities?

Other beneficial minority programs and services

Tutoring was found to be particularly effective for minorities. Training tutors in cultural differences and cross-cultural communication could have an impact on the success of minorities. Professional development activities for faculty and staff should also focus on issues of diversity and multiculturalism.

Summer educational programs provide basic skills remediation before students need to demonstrate these skills in regular courses. In addition, summer programs allow minorities to be on campus to learn the location of buildings and become involved in the campus culture before the regular academic year. They also allow minorities to establish social and cultural connections that may be difficult to make during the regular academic year. Since there are fewer students, faculty, or staff available to provide these necessary **personal support networks** for minorities, peer counseling may be an effective substitute.

Short-term topical workshops on financial aid, life and career planning, test-taking strategies, personal organization, matriculation management, coping with racism, and assertiveness training are topics that can benefit minorities. Workshops on academic rules and policies are particularly beneficial to minorities who are first generation students. **Freshmen seminar** experiences help minorities understand institutional and faculty expectations and the reward system of the institution.

Financial aid is a contributing factor to minority attrition. Developmental program counselors and advisors should be aware of financial aid opportunities, deadlines, and procedures to be able to convey this knowledge when necessary.

Involvement in campus activities is related to staying in college. Developmental education programs should establish good relationships with minority organizations on campus, which could encourage minority involvement in student activities. All institutions should devise intervention strategies for minorities that are designed to increase their involvement in campus life and in the culture of the institution.

Some experts speculate that since community colleges rarely have residential populations and many of their students work part time, these students have very few opportunities to become

involved in the academic or nonacademic environment of the college. This lack of involvement may have more of a negative impact on minorities than Caucasians.

In summary, efforts to promote minority retention need to be systematic. Developmental education programs can provide a variety of academic and nonacademic support mechanisms that address the causes of minorities dropping out of college. These programs, however, should be accessible in an environment comfortable for minority students.

Source: "Retaining Minority Students Through Developmental Education," by Hunter R. Boylan, D. Patrick Saxon, James R. White, and Alexander Erwin. Research in Developmental Education. Volume 11, Issue 3, 1994.

Comments

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REMEDIAL AND DEVELOPMENTAL PROGRAMS IN OHIO'S PUBLIC COLLEGES AND UNIVERSITIES

COMMENTS FROM OHIO ASSOCIATION OF DEVELOPMENTAL EDUCATION

The issues surrounding developmental education are complex and often misunderstood, both because of the diversity of students served and the diversity of higher education institutions that offer such courses and services. Although the report on "Remedial and Developmental Programs in Ohio's Public Colleges and Universities" is a commendable attempt to examine the complex issues, conclusions drawn from this study are questionable, especially given the descriptive research design. The methodology and limited sample does not support the conclusions drawn about the effects, or lack thereof, of developmental education courses.

This is especially true in statements that allude to Ohio paying twice for the same type of instruction and that developmental courses seem less effective in improving graduation rates (page iv). These conclusions were based on self-reported data from ten Ohio campuses, none of which were community colleges. LOEO also reported that 85% of the developmental students were ages 18-24. This data needs to be carefully reviewed, because age is a major factor affecting the thrust of LOEO conclusions and recommendations concerning the preparation of traditional-aged high school graduates attending college and who are recipients of developmental services. National data on "College Enrollment by Age" published in the Chronicle of Higher Education (1994, September) indicated that of those students attending college in the fall of 1992, 35.1% were over the age of 25.

Dr. Hunter Boylan, in Research In Developmental Education (Vol 12, Issue 2, 1995), "Making the Case for Developmental Education," addresses issues in the developmental education debate by making the following points. We have elaborated on his points to address our concerns with recommendations of the report.

1. Students need developmental education. Estimates from the National Center for Education statistics (1991) indicate that, depending on the state and institution, between 16% and 40% of each year's incoming students are inadequately prepared for college-level work.
2. Most colleges need to admit unprepared students. Institutions are committed to making higher education accessible to the citizens of this state or region. By educating and training underprepared students, colleges and universities can expand the potential pool of self-sufficient workers and professionals in Ohio necessary for economic development. Limiting access to four-year public institutions in Ohio to only those who pass the Twelfth Grade Proficiency Test ignores attempts by higher education institutions to meet the demand for educated citizens by developing institution-specific admission standards and offering appropriate developmental education courses and services to ensure the success of underprepared students. Developmental education is part of the solution, not part of the problem, and is a low-cost, effective means of ensuring access.
3. Delegating developmental education to two-year colleges is not the answer. The recommendation that below-college level courses and support services should only be funded at two-year institutions reflects a simplistic understanding of the higher education system in Ohio. Underprepared students represent too large a percentage of many freshman classes to eliminate them and still function as comprehensive public universities, especially in large urban regions or rural communities. Two-year schools can't prepare students for all four year schools; there is too much range in curriculum and academic demand.
4. School reform initiatives are not likely to improve the quality of high school graduates in the foreseeable future. In spite of many previous reports criticizing our educational systems and arguing for school reform, little improvement has been demonstrated nationally in SAT or ACT scores during the past decade. While K-12 schools are attempting to improve the academic preparedness of high school graduates, colleges and universities must strengthen the developmental education programs, or Ohio colleges will have to turn away citizens already out of high school and new graduates still underprepared, thus reducing even more the limited pool of workers and professionals available in Ohio.

We recognize that this study was a difficult one due to multiple variables that impact students' performance in higher education. We applaud the reports' efforts to reestablish line item funding for developmental education to ensure that all institutions offer comprehensive support services.

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Legislative Office of Education Oversight's Response to the Ohio Association For Developmental Education Comments

The Legislative Committee on Education Oversight allows agencies affected by LOEO studies to have comments of reasonable length included in the final report. LOEO staff may respond to an agency's comments.

The Ohio Association for Developmental Education (OADE) response states that LOEO's recommendation requiring recent high school graduates to pass Ohio's Twelfth Grade Proficiency Test to be admitted to the main campuses of universities:

> ignores attempts by higher education institutions to meet the demand for educated citizens by developing institution-specific admission standards and offering appropriate developmental education courses and services to ensure the success of underprepared students.

LOEO's data show that only 35% of underprepared students attending main campuses of universities graduate, compared to 54% of prepared students. LOEO believes that unless underprepared students graduate, the value of having access to the main campus is minimized. By targeting funding for and expertise about below-college-level developmental education at two-year institutions, we believe underprepared students chances of graduating would increase. We do not agree that this recommendation limits access to higher education in Ohio.

Moreover, this recommendation is consistent with the Ohio Board of Regents' effort to target the missions of institutions and their service expectations for two-year colleges and regional campuses. As noted, one of the service expectations is for two-year institutions to provide "an array of developmental education services." Regents is linking two-year institutions' performance on these services expectations to future state funding. These evaluations should ensure that two-year institutions provide effective developmental education programs.

OADE also claims:

> Delegating developmental education to two-year colleges is not the answer. The recommendation that below-college-level courses and support services should only be funded at two-year institutions reflects a simplistic understanding of the higher education system in Ohio. Underprepared students represent too large a percentage of many freshman classes to eliminate them and still function as comprehensive public universities, especially in large urban regions or rural communities. Two-year schools can't prepare students for all four year schools; there is too much range in curriculum and academic demand.

LOEO does not agree that to be a comprehensive public university the main campuses must offer below-college-level courses in basic arithmetic and English. We believe the two-year campuses have the capacity to serve the 26% of students LOEO identified as needing below-college-level instruction. Moreover, if two-year colleges cannot prepare students for four-year universities because "there is too much range in curriculum and academic demand," how can we expect Ohio high schools to prepare them?

LOEO's data are for freshmen who entered during the 1988-1989 and 1990-1991 academic years. National data published in the Chronicle of Higher Education focused on all students enrolled in college in the fall of 1992 and not merely the freshmen class. Naturally, including sophomore, junior and senior students would increase the percentage of older students.

As described on page 12 of our study, the data used to conclude that Ohio is paying twice for the same type of instruction was based on students from ten campuses who indicated their high school background when taking the ACT. As such, these data are self-reported. The graduation rates were calculated from data obtained from universities and colleges and were not self-reported. Studies sponsored by the Exxon Education Foundation and published in Research in Developmental Education support LOEO's conclusion about graduation rates. Similar to LOEO, these studies concluded that developmental education programs seem to be less effective in improving graduation rates for underprepared students.

Finally, the methodology used in our study is consistent with, or more rigorous than, virtually all the studies on developmental education examined for this report, including the study regularly cited by OADE. These studies make similar, or more definitive, conclusions about the effects of developmental education on underprepared students.