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ABSTRACT

This paper identified factors within the higher education environment that significantly influence student retention rates and the timely graduation of traditional full-time, first-time, degree seeking students in the state of Colorado. The paper uses the research findings of national studies and other studies conducted by Wisconsin and California. Profiles of Colorado students were developed with information from a state longitudinal student tracking system. The first of three main sections looks at factors influencing undergraduate student productivity rates: student academic preparedness, family socioeconomic status, and the higher education academic environment. A second section looks at the amount of time that students take to complete baccalaureate degree requirements noting that it has been increasing. Several factors that increase time to graduation are examined including taking fewer credits in order to work while in school, taking additional courses, changing the major field of study, difficulties with registering for courses, repeating coursework, and needing better advising. A summary argues that increasing the productivity of higher education institutions is subject to many complex factors and that each institution must have their own particular plan for affecting graduation and retention rates. Fourteen references are cited. (JB)

COLORADO COMMISSION ON HIGHER EDUCATION MASTER PLAN BACKGROUND PAPER:

How Can the Postsecondary Educational Process Become More Effective, Particularly at the Undergraduate Level?

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Undergraduate Retention and Graduation
Time to Degree

INTRODUCTION

Widespread concern has been expressed about the rate at which higher education institutions are graduating their students and about the length of time required for students to complete baccalaureate degree requirements. In Colorado this concern was expressed by the passage of Senate Bill 155 by the Colorado General Assembly in 1992 that requires the examination of factors that influence the effectiveness and efficiency of undergraduate student programs, especially the time necessary for completion of degree programs. Nationally, about fifty percent of undergraduate students attain a baccalaureate degree. Most degrees are not earned within a four-year period.

This issue paper identifies factors within the higher education environment that significantly influence student retention rates and the timely graduation of traditional full-first-time, degree-seeking students. The paper includes the research findings of national studies and studies conducted by other states (particularly, Wisconsin and California). Profiles of Colorado students were developed using information provided by the Commission's Cohort Tracking System and Student Unit-Records Data System (SURDS) for traditional students who enrolled for the first time in the fall of 1986.

UNDERGRADUATE RETENTION AND GRADUATE

National research suggests that the three most significant factors influencing undergraduate student productivity rates are student academic preparedness, family socioeconomic status, and the higher education academic environment.

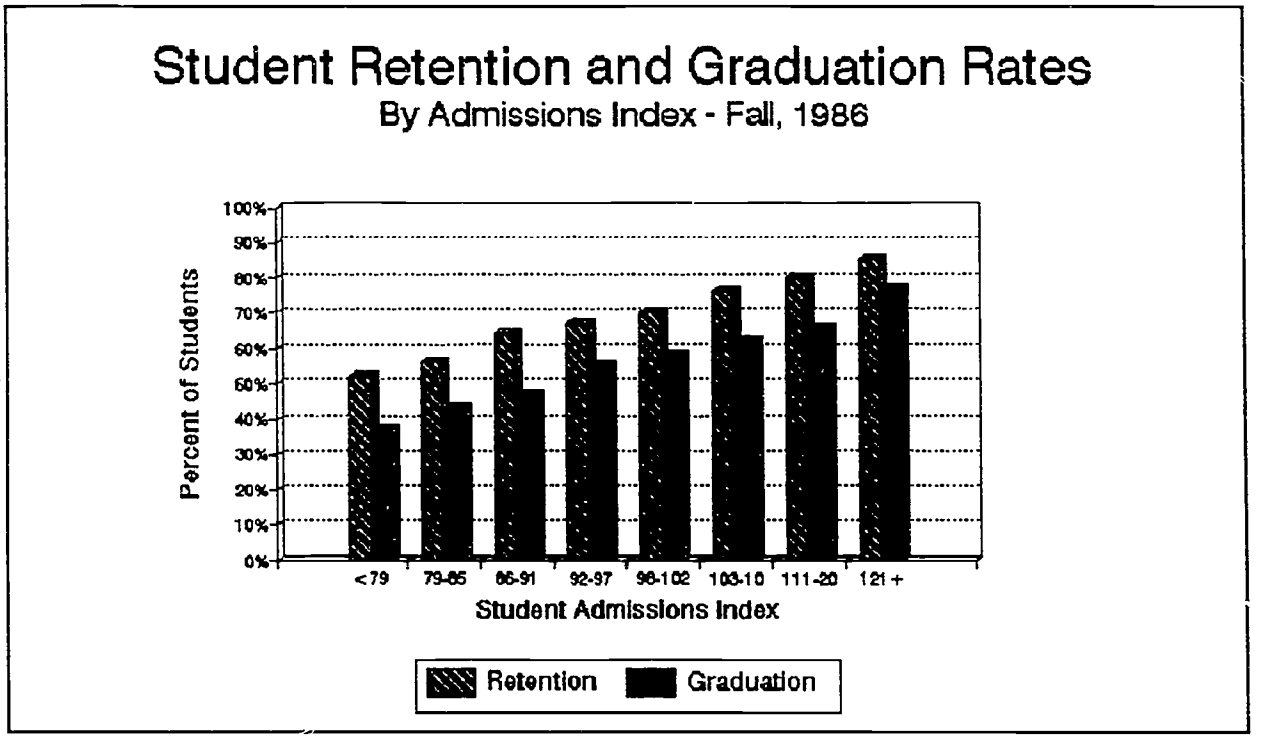
National statistics indicate the graduation rate of American students has remained fairly stable around 50 percent since the early 1900's. (6)(13) Because student demographics and the higher education environment have changed substantially over that period, this stability cannot be attributed to one specific factor. A variety of factors combine together to influence a student's decision to continue pursuing a degree. These factors appear to be interrelated and their impact tends to be cumulative. Therefore, attempts to increase the overall graduation rate by focusing on any single factor may have limited effectiveness. This issue paper will focus on three broad factors affecting student retention and graduation. These factors are academic preparedness, socioeconomic status, and academic environment.

Academic Preparedness

Student academic preparedness as measured by high school rank is the most significant indicator of student success in college. Nationally, students who rank in the uppermost high school quartile are three times more likely to graduate college than those in the lowest high school quartile.

In Colorado, a student's level of academic preparedness is measured by the student's admission index. This index represents the combination of high school grade point average, or rank, and the student's college entrance exam score. Colorado data suggests that students who are admitted to college with an admissions index score of 121 or more are twice as likely to graduate than students with an admissions index score of than 79.

Figure 1[1]



[1]Figure 1 describes first-time, baccalaureate degree-seeking students of all ages who enrolled at a Colorado four-year institution in Fall 1986. Six percent of the these students were enrolled part-time. Seventy-eight percent were Colorado residents. Retention is defined as the percentage of students who enrolled for the first time in Fall 1986 and re-enrolled the following fall (Fall 1987). The graduation rate is the percentage of students who enrolled for the first-time in Fall 1986 and graduated within five years (by Fall, 1991).

- The higher the admissions index score, the greater the rate of student retention from the first year to the second year. Almost 50 percent of the low admissions score students did not persist to the second year of college.

- The higher the admissions index score, the greater the rate of student graduation after five years.

- A larger percentage of the 1986 freshmen class students, with an admissions index of over 121 who enrolled the following fall, graduated in five years than students who entered with and admissions index of less than 79.

Institutions that admit students with a high level of academic preparedness tend to have both higher retention and graduation rates. For the Colorado students in our analysis, some general relationships were;

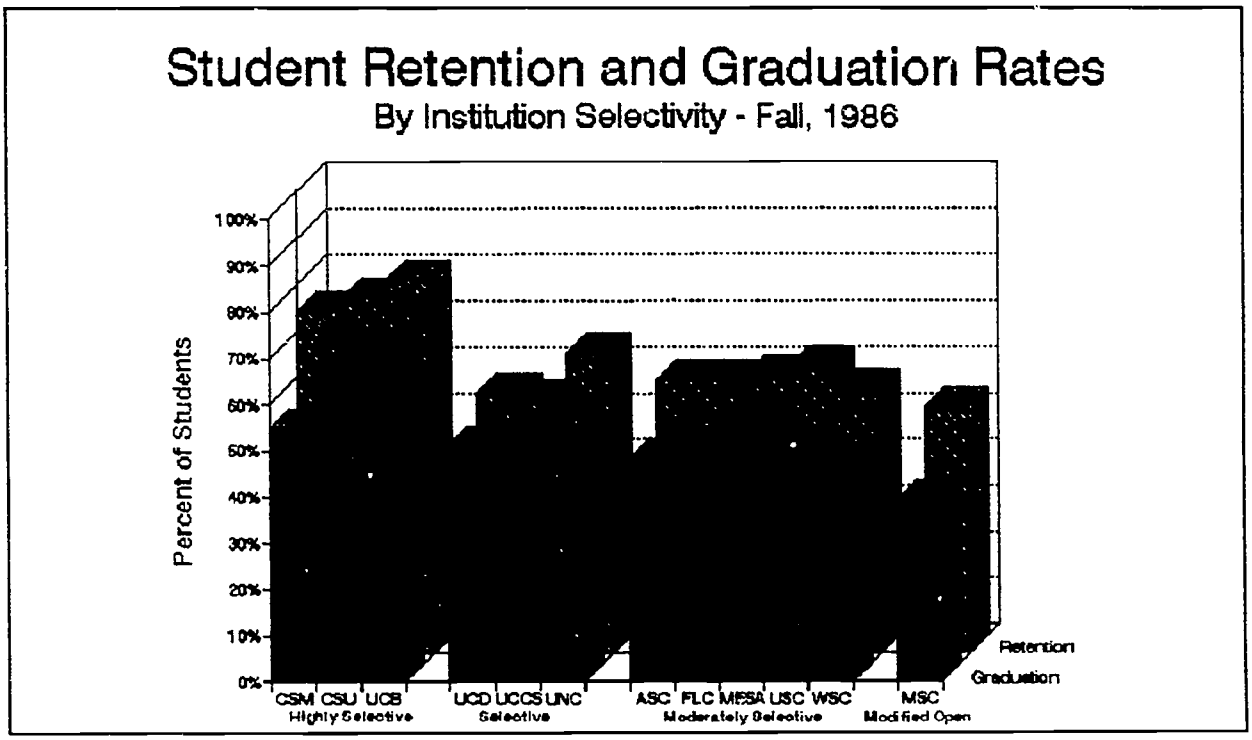
- Institutions that serve metropolitan areas as a major part of their mission (UCD, UCCS, MESA, METRO) tend to have lower retention rates than all other institutions.

- Commuter institutions (UCD, UCCS, METRO) have lower retention rates than residential institutions.

- Highly selective Colorado institutions (UCB, CSU and CSM) display a higher rate of student persistence and graduation than selective and moderately selective institutions.

The high retention and graduation rates attained by private institutions may be attributable to the admittance of a large number of very well prepared students. Nationally, traditional students entering a four-year private institution have a degree completion rate of 54 percent within six years, compared to 43 percent for public institutions.(7)

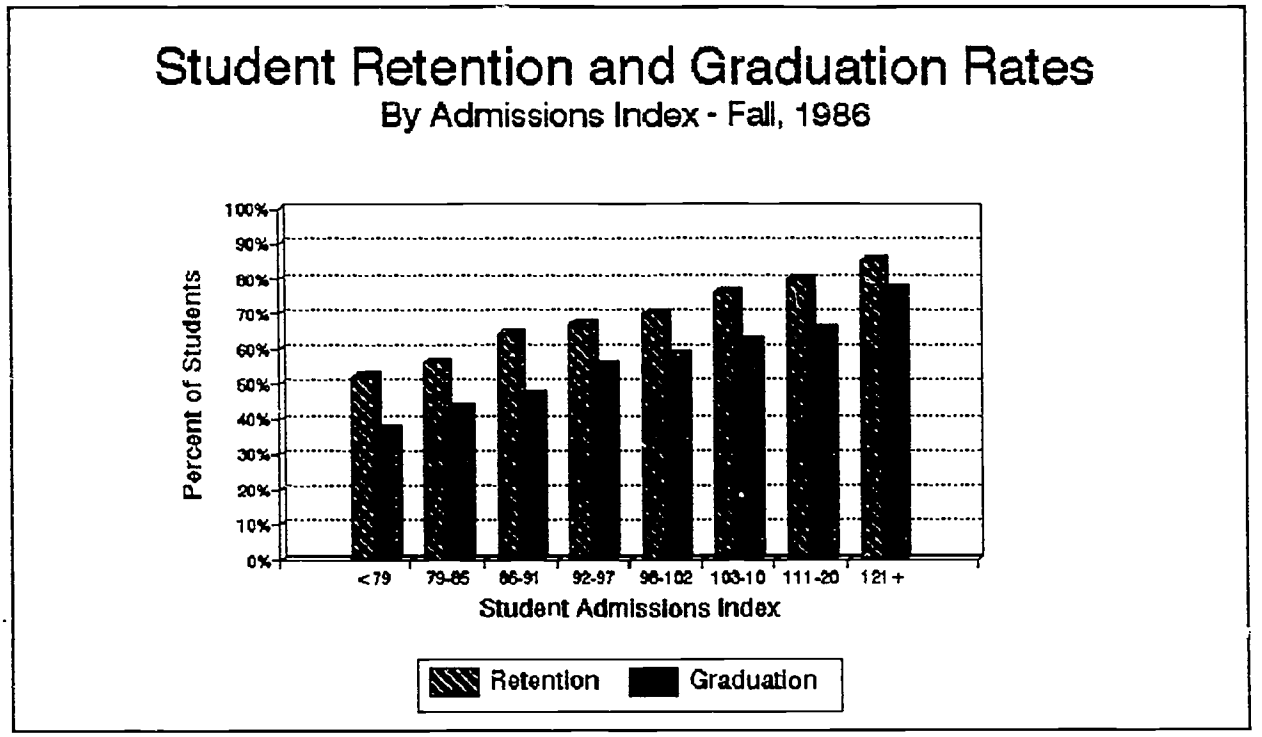
Figure 2[2]



Students who prepare academically by completing a core high school program tend to earn better grades in college, are more likely to stay in college, and are more likely to graduate. The 1992 summary report of ACT Assessment Results found that only 56 percent of Colorado high school students who took the ACT had completed high school core coursework in preparation for college. Students who completed the core coursework scored an average of three points higher on the ACT.

[2]Figure 2 describes first-year retention rates (from Fall 1986 to Fall 1987) and five year gradation rates by level of institution selectivity as defined by 1986 CCHE admissions policies. The data displayed represents first-time, baccalaureate degree-seeking students of all ages who enrolled at a Colorado four-year institution in Fall 1986. Six percent of the these students were enrolled part-time. Seventy-eight percent were Colorado residents. UCD was a member of the selective tier in 1986. The lack of social security numbers for some students at the Colorado School of Mines (CSM) in Fall 1986 may have resulted in reduced retention and graduation rates, subsequent analyses for later years may show rates for CSM that are similar to those at UCB.

Figure 3[3]



As demonstrated by the graphic above, academic preparedness is also related to family income, or socioeconomic status.

Family Socioeconomic Status

Family socioeconomic status is the second most significant factor in predicting student retention and graduation. Cultural background may influence an individual's career aspirations and long range educational goals. One indicator of a high school student's plans to attend college is the student's completion of the high school college core intended to prepare them for college level courses.

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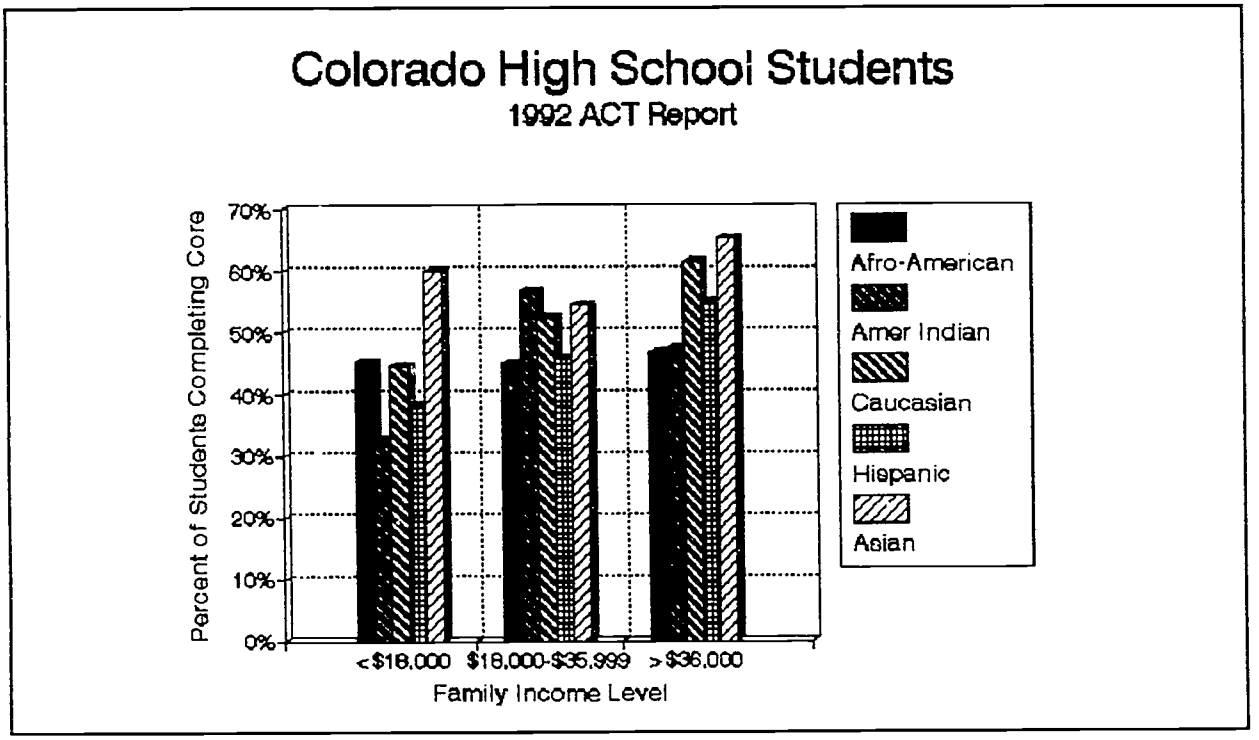
[3]Figure 3 describes student retention and graduation rates of first-time, baccalaureate degree-seeking students of all ages who enrolled at a Colorado four-year institution in Fall 1986. Six percent of the these students were enrolled part-time. Seventy-eight percent were Colorado residents. Retention is defined as the percentage of students who enrolled for the first time in Fall 1986 and re-enrolled the following fall (Fall 1987). The graduation rate is the percentage of students who enrolled for the first-time in Fall 1986 and graduated within five years (by Fall 1991). The student admissions index is calculated as a combination of high school grade point average, or class rank, and the student's college entrance exam score.

Figure 4[4]



The number of Colorado students taking the ACT in 1992 who had completed college preparatory classes differed by family income status and by ethnicity.

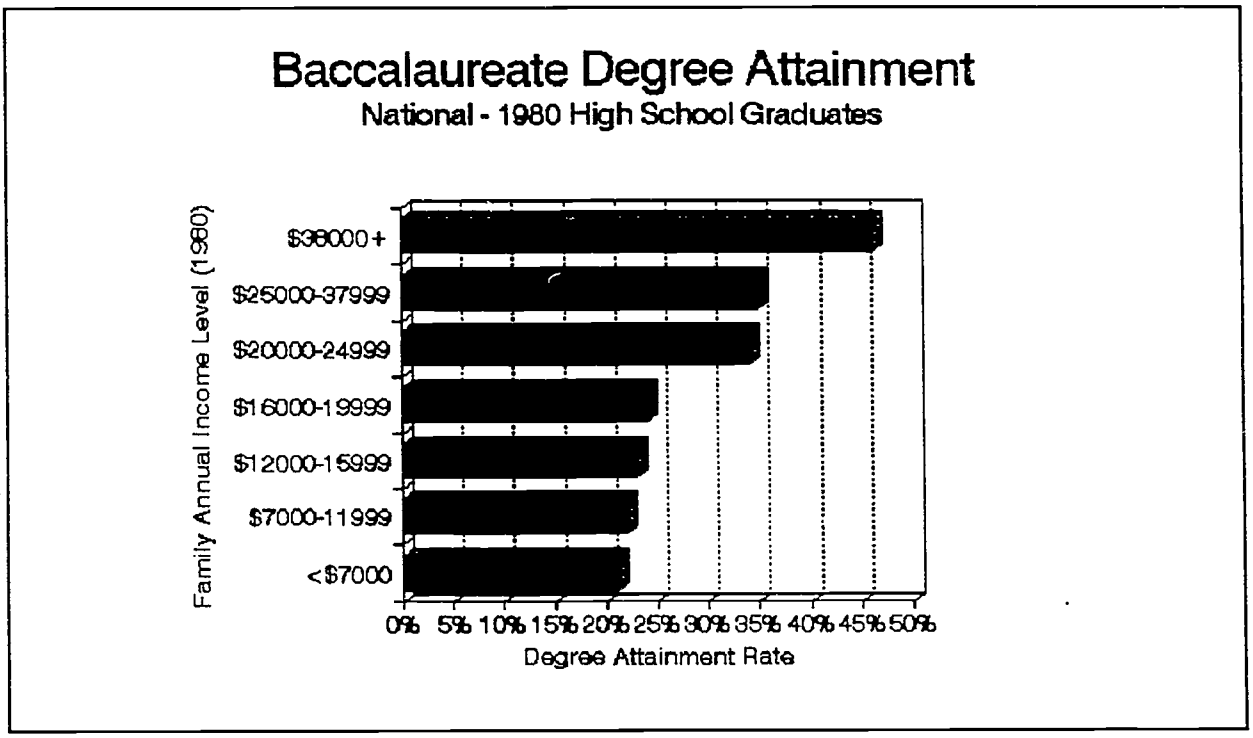
- **In general, the higher the family income level the more likely the student completed the prep classes (or planned to go to college.)**

- **Higher education goals differ by cultural group. The majority of Asian students at all income levels took college prep classes. Forty-five percent of Afro-American high school students completed college prep classes, regardless of income level. The number of Caucasian and Hispanic students preparing for college varied by income - the higher the family income level, the more likely a student would complete college preparatory classes.**

[4]Figure 4 represents the findings of the 1992 ACT Assessment Resuits for Colorado. The information describes the performance of Colorado's 1992 graduating high school seniors who took the ACT assessment as junior or seniors.

A national study of 1980 high school graduates who had graduated from college by Spring 1986 found that percentage of college graduates from families with an annual income of $38,000 (in 1980 dollars) was twice that of college graduates from families with an income of less than $7,000.

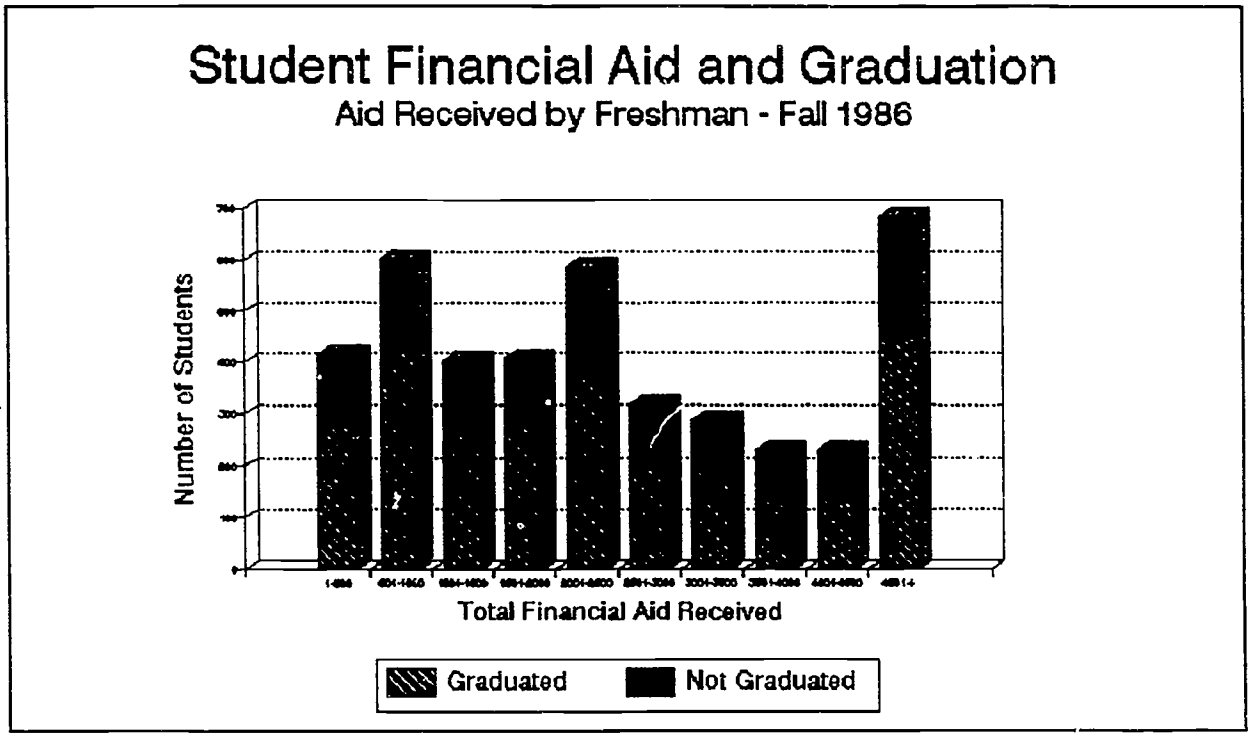
Figure 5[5]



In an effort to reduce barriers to higher education due to financial constraints, various forms and amounts of financial aid have been developed. Nationally, one in two undergraduates now receives financial aid to attend college.(11) Two-thirds of the Colorado college graduates who entered as freshmen in 1986, received some form of financial assistance during their student career.

[5]Figure 5 displays information provided by the 1980 High School and Beyond data file that contains extensive information on 1980 high school graduates. This cohort was followed by the National Center for Education Statistics at periodic intervals to determine student progress in higher education. This graph describes American students who started college and who had obtained a baccalaureate degree by spring of 1986.

Figure 6[6]



- **There is no apparent relationship between the total amount of financial aid received and student graduation. For all levels of total award amounts, about two-thirds of the students graduated.**

- **With the exception of student work study, there was no apparent relationship between the type of aid received and student graduation. For students receiving financial aid in their first year:**

- **For loans, 25.8 percent of resident students received aid in the first year. There was no relationship between increased graduation rates and greater loan amounts.**

- **For need-based grants, 20 percent of resident students received aid the first year. Freshmen students who did not receive need-based grants had a higher five year graduation rate than the students who did receive need-based grants. There was no correlation between the amount of the need-based grant received and graduation rates.**

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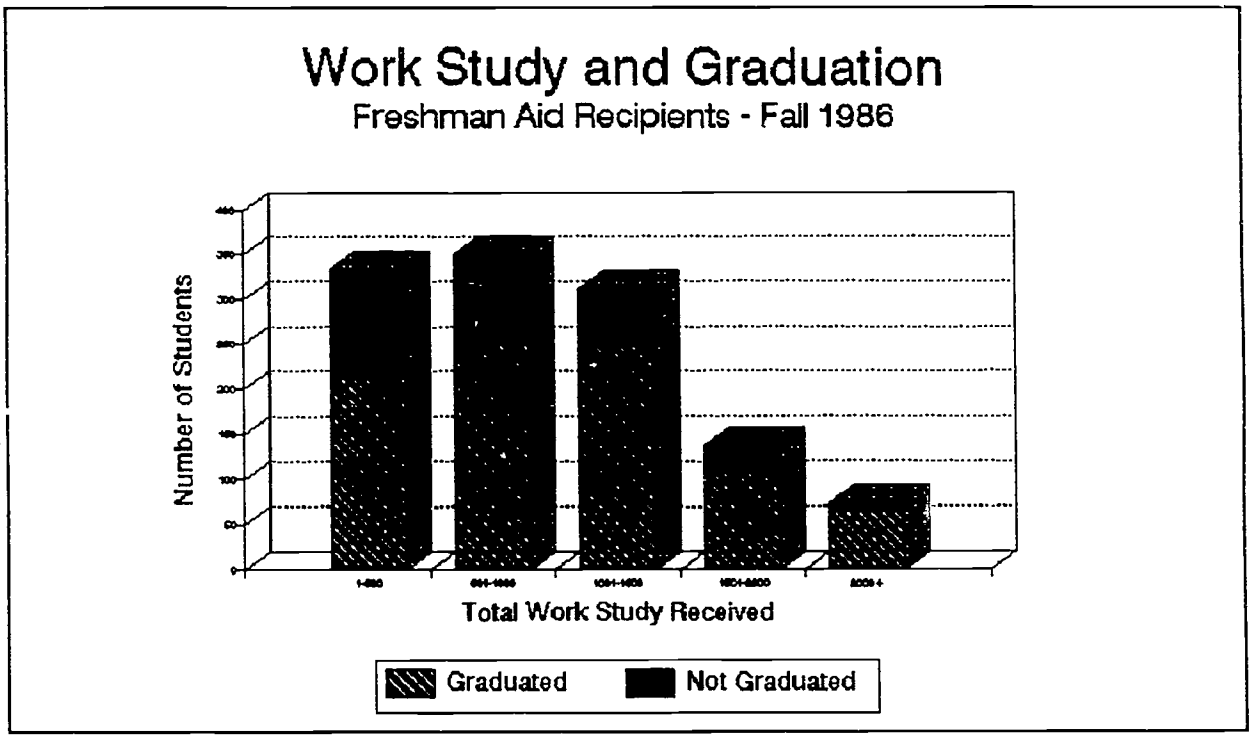
[6]Figure 6 describes financial aid amounts received by Colorado resident, first-time, baccalaureate degree-seeking freshmen enrolled as full-time freshmen in Fall 1986. Sources of aid included grants, loans, merit and scholarship monies.

- **For merit-based grants, 12.7 percent of resident students received aid the first year. There was a relationship between the amount of merit received and the graduation rate, but this can be accounted for by the higher index scores of the students eligible for merit aid.**

- **For work study awards, 14.4 percent of resident students received aid the first year. For those students earning over $1,000, the graduation rate exceeded the rate of the students receiving no aid.**

Figure 7[7]



Research on the impact of various types of financial assistance on retention and graduation is not conclusive. Students may receive a combination of aid types as part of a total financial aid package. It is unclear whether students may be influenced by the total amount of the aid offer or by the type of aid offered. The 1986 Colorado freshmen who persisted to their sophomore year had received all types of aid.

[7]Figure 7 describes Colorado resident first-time, baccalaureate degree-seeking freshman enrolled as full-time freshmen in Fall 1986 who received work study (need-based work study and non-need work study) as a part of their financial aid package.

Aid Type	Percent of Students
Loans	26.8%
Grants	20.0%
Merit	16.3%
Work Study	15.4%

In 1986, 49 percent of Colorado college freshmen received some form of financial assistance in their first year. Seventy-four percent of these freshmen enrolled the following year. The percentage of students receiving financial aid varied by the student's admission index score.

A larger percentage of 1986 freshmen students with high admissions index scores received financial assistance than those with low admissions scores. Both need based and non-need based aid is included in the analysis. The large number of high index students receiving aid may be the result of the likelihood that many of these individuals are eligible for merit aid and are more likely to apply for non-need based work study.

Higher Education Academic Environment

For traditional students, research indicates that the perceived value of the experiences gained through time spent pursuing a baccalaureate degree influences student retention and graduation. Students may be less likely to complete their education if the cost of attendance or the perceived benefits associated with a degree, make alternatives such as a full-time job more appealing. (13) The student's perception of the value of a degree program is related to the student's experiences in college classroom and non-classroom learning activities and information provided by academic support services, especially student advising.

College Learning Activities

Research suggests that enhancement of the academic environment to provide a diversity of quality learning activities may increase student retention. Students who perceive value and achieve progress toward their educational goals are more likely to remain in college and to graduate. Effective undergraduate teaching practices add value and quality to the students learning experience.

Fifty years of research on methods of teaching and learning and the social interactions of teachers and students have led to the identification of six significant factors in quality education - activity, cooperation, diversity, expectations, interaction, and responsibility. (6) These factors have been incorporated into a list of effective teaching practices that enhance the educational experience and encourage student retention and graduation.

- Frequent Student-Faculty Contact

  Frequent student-faculty contact both inside and outside of the classroom is the most important factor in student motivation and involvement that results in program completion and effective learning. Faculty should devote considerable time to the task of undergraduate instruction including, student advising, substantial office hours, out-of-class contact with students, and scholarships related to teaching in their disciplines.

- High Expectations

  Learning expectations of students should be placed at high but attainable levels.

- Coherent Curriculum

  Required course structures and sequences, particularly in general education requirements lead to a more coherent college learning experience.

- Synthesizing Experiences

  Students need the opportunity to actively integrate knowledge and skills learned in different places in the context of a single problem or setting. (Senior seminar, project or thesis, capstone courses, and integrative experiences).

- Integrating Education and Experience

  Students should have multiple opportunities to apply what is learned (Internship education-related work experiences).

- Active Learning

  Students should actively exercise and demonstrate skills through frequent discussion of presented class material, considerable written work and the application of learned material to new settings or contexts.

- Ongoing Practice of Learned Skills

  Students should have multiple opportunities to exercise higher order skills such as communication (written and oral), critical thinking and problem-solving, or basic quantitative techniques.

- Assessment and Prompt Feedback

  Student need to be provided with information about their academic performance promptly and frequently.

- Collaborative Learning

  Students should engage in team learning efforts rather than learn entirely on their own. Good learning, like good work, is collaborative and social, not competitive and isolated.

- Considerable Time on Task

  Learning requires exposure to information in various forms over a period of time. Lectures should be supplemented with workshops and laboratories that present the same information in a variety of ways.

- Respect Diverse Talents and Ways of Knowing

  Instruction should actively tap prior student and faculty experiences. Students of diverse background ought to actively interact and informal mechanisms should be available for them to learn from one another.

Student Advising

Accessible and frequent student advising may positively influence student retention. Appropriate advising is essential to the development of educational objectives and course scheduling. Some students have expressed a desire for improvements in the quality and availability of student advising. There is a general perception among higher education researchers that college student advising services should be more comprehensive providing assistance in:

- Setting academic program goals and expectations and providing information on degree program requirements

  Accurate information regarding institution general education requirements and departmental major requirements should be readily accessible. Student academic contracts should be developed, evaluated, revised and followed by the institution and student.

- Career development

  Forming a sense of "career identity" is a significant developmental task for undergraduate students. Advising aids the student in developing clearly defined short term and long term educational goals. Assistance in identifying academic-related employment opportunities can enhance the student's learning experience.

- Personal issues

  A systematic, continuous support network should be developed that includes clearly identified institutional resources, long-term relationships between advisors and students, and organized mentoring programs targeted at specific student needs .(8)

TIME TO GRADUATION

Statistics indicate that the amount of time that a student takes to complete baccalaureate degree requirements has been increasing at some institutions. Within the University of Wisconsin System, the time undergraduates spent pursuing their degree increased by a half term between 1982 and 1990 (9.1 terms and 9.6 terms, respectively). There are many factors that affect the amount of time a student spends in college.

Institutions within the states of Wisconsin and California have surveyed students to determine the reasons for the increased length of time students are attending college. These institutions found that while one or two reasons may dominate for any given individual, students who eventually completed their degree say that several factors played some role in extending their time.

A sample of California students rated 20 factors as to their significance in increasing the amount of time they spent pursuing their degree.(3) The chart below lists the five most significant factors identified by students within the University of California system and the California State University.

	Univ of CA	CA State
Took Fewer Credits To Work	*	*
Taking Additional Courses	*	*
Changing Major Field of Study	*	*
Difficulty Registering - Major Classes	*	
Difficulty Registering - General Classes	*	
Repeating Coursework		*
Needed Better Advising		*

The significant factors vary by institution. The first three factors - working, additional classes, and changing majors - were cited by over 50 percent of the students in both systems, suggesting that these factors, associated with student choices, may be common for all institutions. The last four factors students cited - difficulty enrolling in classes, repeating classes and insufficient advising represent additional difficulties that students may encounter at some institutions.

Working Students

More students are now working while attending school. In 1979 national statistics indicated that about 46 percent of college students also held a job. By 1989 that figure had increased to 53 percent. On average, students are now working about 20 hours a week.(14) Working students are taking smaller semester credit loads. California institutions found that two-thirds of the students who were taking longer to complete their degrees cited work as a significant factor. Students decide to work while attending college for various reasons.

- Some students want to combine education and work experience. Students who graduate with related experience are more competitive in the job market and generally begin employment at higher salary levels.

- Some students need more money. Students are facing increasing tuition and living costs, yet student hourly wages and financial assistance have not kept pace with increasing expenses. California institutions found that about 20 percent of students surveyed indicated that they were taking longer to graduate because they had run out of money or lacked financial assistance.

- Some students are attempting to hold down college expenses and to reduce the amount of debt incurred during their college years. Nationally, the share of recent college grads with outstanding loans is close to 60 percent. (12) Of the Colorado undergraduate students who began their study in 1986 and have since graduated, 40 percent financed a portion of their education with student loans. Two-thirds of these Colorado students accumulated student loans in excess of $2500.

Loan Debts of Colorado Graduates who began study in 1986.

Loan Debt	Baccalaureate Graduates
$2500 or less	32%
$2500 - $5000	23%
$5000 - $10,000	25%
$10,001 - $15,000	15%
Over $15,000	6%

- Other reasons students decrease their credit loads include maintaining a preferred lifestyle, family obligations, and other personal obligations.

Taking Additional Courses

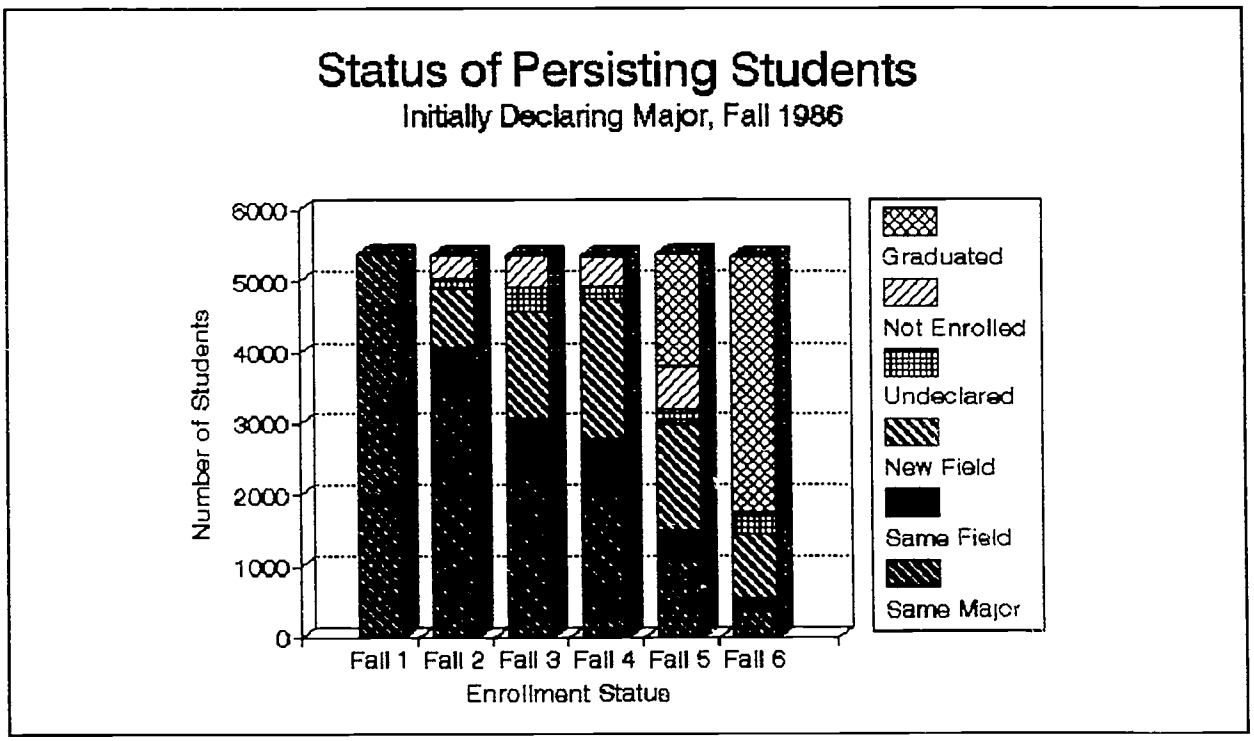
Up to two-thirds of the students polled by the California institutions believed that their decision to take courses beyond the number of credits required for graduation was a factor in lengthening the time they spent in college. Students enroll in classes that are not required for their degree for the following reasons.

- **To explore fields of study during the first two years is helpful to students who have not declared a major field of study.**
- **To gain exposure to fields related to a student's major may enable them to be more competitive upon graduation.**
- **To gain exposure to a broad range of fields enables a student to be more flexible and adaptable to future employment opportunities.**
- **To take the opportunity to develop personal interests enhances the overall quality of the undergraduate learning experience.**

Change in Major Field of Study

Many California students at the University of California (45 percent) and the California State University (60 percent) cited changing majors a factor in increasing their time to graduation. (3) About three-fourths (72 percent) of 1986 Colorado freshmen declared a major upon admission. Students who had declared a major upon admission or had changed to a related field were twice as likely to have graduated after five years of study than were students who decided upon a major later in their educational career or who had changed their majors to an unrelated field.

Figure 8[8]



- **Two-thirds (66.8 percent) of the students who declared a major graduated within five years compared to 56 percent of the students who had not initially declared a major.**

- **By the beginning of their junior year, almost half (46 percent) of the students who had declared a major at the time of admission changed their major.**

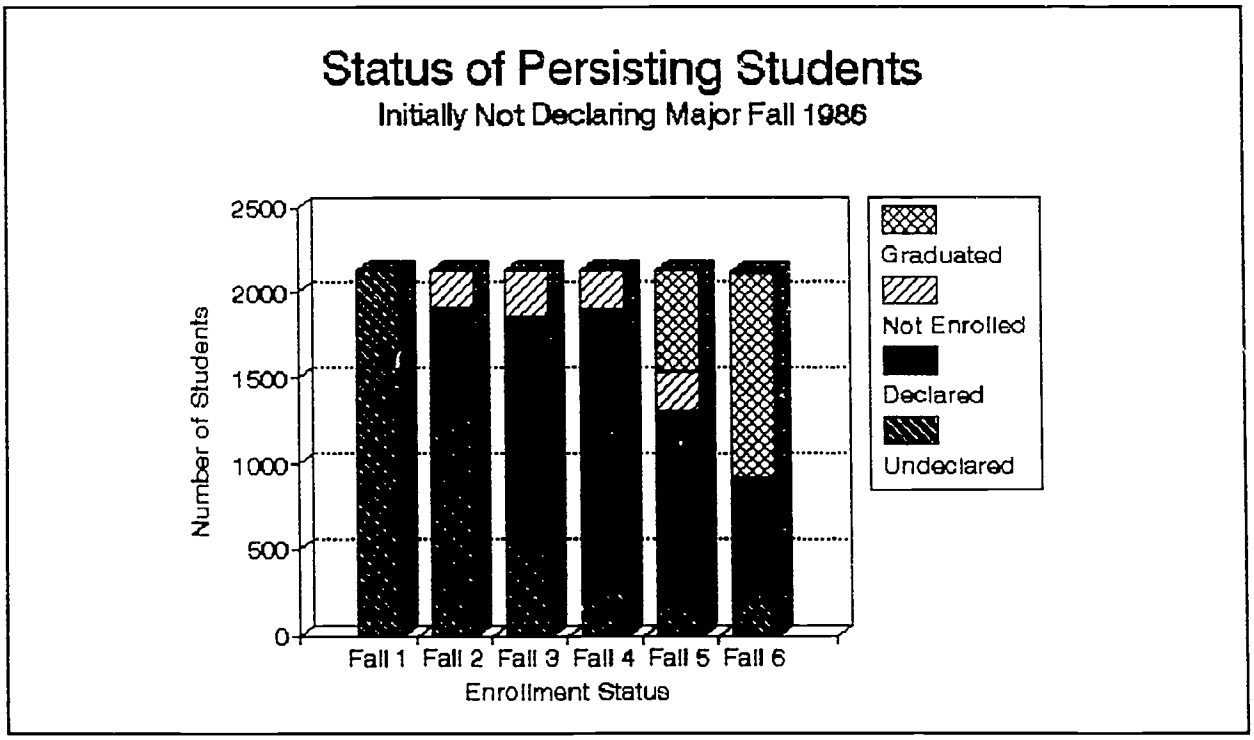
[8]Figure 8 describes first-time, baccalaureate degree-seeking students of all ages who declared a major upon enrollment at a Colorado four-year institution in Fall 1986 and who had graduated or were enrolled in Fall 1991. The data includes both full-time and part-time students and in-state and out-of state students.

- **The majority of students (57 percent) changing majors entered an unrelated field of study (New Field). Forty-three percent switched to a major within their original field of study (Same Field).**

- **Only seven percent of students who had declared a major upon admission were still pursuing their degree after five years.**

- **Of the 1986 freshmen who were still enrolled after five years, 44.8 percent had changed majors. Students who change majors within the same field of study do not appear to be taking significantly longer to graduate. Students who change majors within the same general field of study (eg. accounting to marketing) may be able to graduate faster since the department's general requirements will remain the same. Students who change general fields of study (eg. music to biology) must fulfill new department general requirements before pursuing the specific courses required for their major.**

Figure 9[9]



[9]Figure 9 describes first-time, baccalaureate degree-seeking students of all ages who did not declare a major upon enrollment at a Colorado four-year institution in Fall 1986 and who had graduated or were enrolled in Fall 1991. The data includes both full-time and part-time students and in-state and out-of state students.

- Seventy-eight percent of the students who had not initially declared a major did so by the beginning of their junior year.

- The point in time that a student declares a major influences the total length of time spent pursuing a degree. Over 25 percent of the students who declared their major late were still enrolled in the fifth year.

Difficulty in Registering for Classes

Students have reported having difficulty scheduling both general education courses and courses in their major field of study. About one-third of the California students surveyed indicated that they had difficulty in enrolling in major courses, -- less than five percent felt that this was a major factor in their delay in graduation. Course availability and scheduling is unique to each institution and is related to the institution's role and mission, faculty, size and availability of facilities, academic program mix, etc. Students may experience difficulties in registering for classes for a variety of reasons.

- There may be a shortage of course sections offered during the semester.

- There may be a shortage of faculty to teach some subject areas.

- Preference for registration may be given to graduating seniors, to entering freshmen, or to declared majors.

- There may be a shortage in available classrooms of appropriate size.

- Student work schedules may conflict with time classes were offered.

Repeating Coursework

The number of students who repeat courses differed greatly at the two California institutions. Students repeat courses for various reasons.

- The student did not receive a passing grade the first time.

- For students hoping to enter a specific major field of study, a minimum GPA may be required. Students can increase their GPA by repeating a course and receiving a higher grade.

Transfer Students

Transfer students generally take longer to complete their degrees due to a loss of credits for courses completed but not accepted by the new institution. Forty percent of the students in the California study cited transferring as a factor in increasing their time to graduation.(3) Colorado students who entered a Colorado four-year institution in Fall 1986 and transferred to another Colorado four-year institution are taking longer to complete their degrees.

Of the full-time students entering a Colorado four-year institution in 1986 who had graduated within five years, 91.5 percent graduated from their initial institution, and 8.5 percent had graduated from another institution. Sixteen percent of the 1986 first-time freshmen were enrolled five years later (Fall 1991). Fifty-six percent of the continuing students were enrolled at their initial institution, while 44 percent had transferred to another institution. Transfer students may lose credits earned at the former institution or be required to take additional courses.

- The student may have exceeded the number of credits that can be applied to a degree at the new institution.
- Students must receive a passing grade in order for the course to be considered eligible for transfer.
- Students may not be able to transfer credits for vocational courses.
- Students may be not only transferring to another institution but changing their major at the same time.
- Some institutions and/or academic departments may not accept certain courses unless they were completed at the degree-granting institution as a quality control measure. Colorado has developed transfer agreements between some two-year institutions and four-year institutions to reduce the number of credits lost during transfer. The possibility of establishing transfer agreements between four year institutions has been explored. No transfer agreements between Colorado four-year institutions have been developed to date.

Academic Advising

One-third to one-half of the California students taking longer to complete their degree identified a need for better advising. Research on student persistence and time to degree suggests that some students would benefit from student advising that includes:

- Assistance in timely selection of a major field of study.

- Accurate information regarding academic requirements and class sequencing may help the student avoid class scheduling conflicts.

- Development of long-term educational goals and scheduling of courses to meet goals

Other Factors

There are two other factors that are commonly suggested as major contributors to the increase in the time to degree - the increasing number of credits required for a degree in certain majors and the time spent in remedial courses. These two factors do not appear to be significant for the majority of Colorado students. However, there is evidence that the numbers of students falling into one of these two categories has been increasing.

Remedial Coursework

Under-preparation in high school requires that a student spend additional time in remedial courses. California institutions found that students believed that taking remedial courses had little impact on the time to degree when compared with other factors. (3) Colorado under-prepared students enrolling in four-year institutions take an average of less than two basic skills courses. Many students take both college level academic courses and basic skills courses during the same semester. Students enrolling in summer basic skills classes could make up deficiencies without increasing the number of semesters spent pursuing a degree.

Increased Degree Requirements

A national longitudinal study (9) of bachelor's degree requirements for the high school class of 1972, found that the number of credits required for graduation by field were:

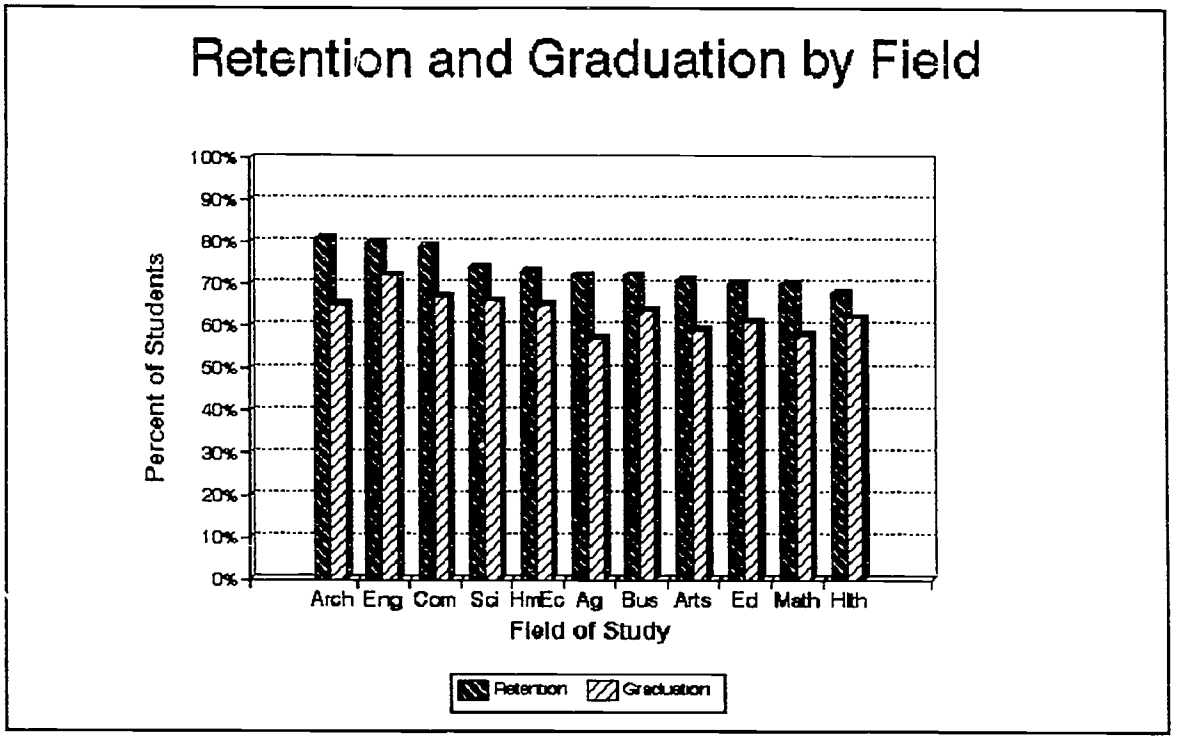
Field of Study	Required Credits
Education	130
Quantitative Fields	129
Business	126
Arts and Humanities	125
Social Sciences	122

An overview of current Colorado institution academic catalogs indicates that in the most often pursued fields of study, the average number of credits required for a degree have not increased over the last twenty years.

Field of Study	Required Credits	Five Year Graduation Rate
Engineering/Technical	129	71%
Health	126	62%
Business	124	64%
Arts and Humanities	124	58%
Social Sciences	124	37%

Colorado students in some fields tend to graduate faster than others. Engineering, business and health services programs graduated a higher percentage of persisting students within five years than architecture, agriculture and arts and humanities programs. The greater number of credits required for engineering programs does not appear to hinder students in timely graduation.

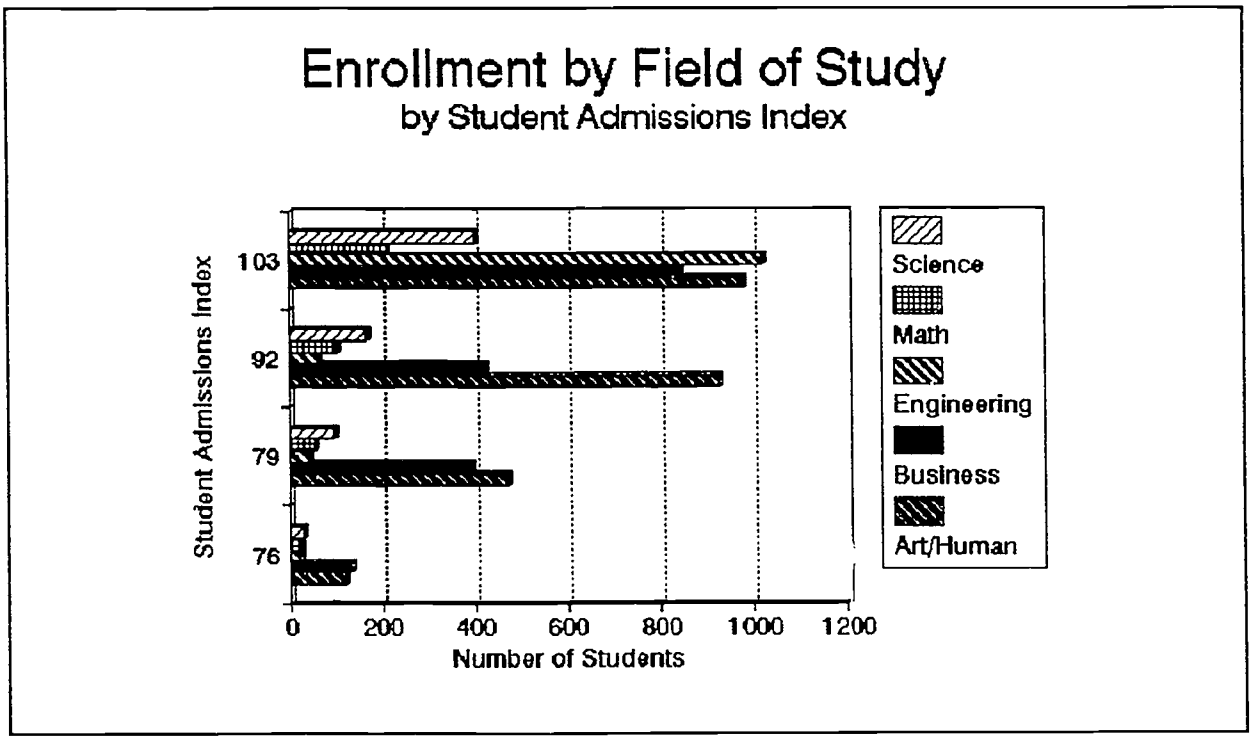
Figure 10[10]



[10]Figure 10 describes first-time, baccalaureate degree-seeking students of all ages who declared major field of study upon enrollment at a Colorado four-year institution in Fall 1986. Six percent of the these students were enrolled part-time. The fields of study are arranged by the percent of student retained from Fall 1986 to Fall 1987.

The timely graduation of engineering students may be related to the high level of academic preparedness of students attracted and admitted into this field of study. Over 89 percent of engineering students have admissions index scores of 103 or over.

Figure 11[11]



For some disciplines, it is becoming increasingly difficult to determine the appropriate division between undergraduate and graduate levels of education. Some highly-technical fields (for example, pharmacy or accounting) are requiring a greater amount of knowledge to begin employment at the entry level. For these academic programs, some accrediting agencies are suggesting an increase in the number of credits required for a baccalaureate degree. If this trend continues, many more technical fields may increase the number of credits required for graduation.

[11]Figure 11 describes first-time, baccalaureate degree-seeking students of all ages who declared a major upon enrollment at a Colorado four-year institution in Fall 1986. The student admissions indexes have been categorized into four ranges of scores: 76-78, 79-91, 92-102, and 103 and above.

SUMMARY

Many factors affect the time a student spends pursuing an undergraduate degree and whether or not the student ultimately achieves a degree. From one perspective, higher education has been successful in maintaining a stable graduation rate nationally over the past half century while also greatly increasing access and delivering a much broader curriculum to a much more diverse student population. Also, many students enroll without the intention of completing degrees.

Other factors largely beyond the control of higher education institutions have influenced graduation rates and the length of time required for degree completion. A larger proportion of undergraduate students are working while attending college than ever before. This limits their expenses while in college, reduces their educational debt, supplements their education with work experience, and may help students maintain a preferred lifestyle. In addition, students often take courses beyond those required for their degree. The point at which students declare their majors can also affect the time spent in earning a degree, and those who change their majors to unrelated fields face the necessity of taking additional courses and lengthening the time toward a degree.

Certain practices and policies of educational institutions may also be a factor in the increased time required for degree completion. The lack of availability of required classes has been the subject of much anecdotal information. The availability and effectiveness of student advising has been cited as a factor in both the graduation rate and the timeliness of graduation. Entering students may not be fully aware of both the knowledge and skills they need to be successful in higher education and the requirements that they must meet to be successful students and to be graduated.

Senate Bill 155 directs the commission and the governing boards to review current practices and to revise appropriate policies to assure that students at state-supported institutions complete their degree programs in the most efficient, effective and productive manner. The complexity of the problem requires that each institution develop both comprehensive and targeted approaches that will respond to the particular needs of their students.

Increasing the retention and graduation of undergraduate students, and helping to ensure the timely graduation of students, especially those who are full-time and motivated toward timely degree completion, should be goals of higher education institutions. It is important to the individual student and his or her family, and also important for efficient utilization of institutional resources. Possibly of greatest importance is the benefit to Colorado and its economy to have the highest possible rate of graduation -- successful, well-educated students who will be well-prepared to enter Colorado's work force.

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