

Change of Major and Academic Success

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Historically, universities and colleges have placed the burden for successful completion of degree programs on the students. The key to meeting this responsibility involved earning adequate grades and completing selected program and degree requirements within a specified time period. The prevailing assumption is that students' positive attitude toward careers, and the process of decision making, will lead to a mature selection of a major and eventual graduation from college. Universities and colleges offer a large number of majors and many courses from which students are expected to choose and plan their programs of study. These academic choices allow for varying degrees of flexibility; for example, admission to some programs may be restricted, while in others students may change to a new program after entering the University in another program. Sometimes students may not qualify for their selected programs but still enroll in courses offered by the university and prove themselves academically capable by completing a series of courses with "C" grades or higher. In the first year, half of the entering class of freshmen may be expected to change their major at least once. Some will change their major several times. Others may not only change their major, but also their College or University. The second year seems to be the typical time for students to alter their academic and career related goals based on their college experiences.¹ Ware and Pooge said that the decision to change programs is the result of gaining academic experience;² and Crites said that the decision to change programs is also the result of career maturity.¹

STATEMENT OF PURPOSE

The purpose of the study was to examine the effect that scores on a career-maturity scale and college experience have on the change of major status of four groups of college students who:

¹ R.S. Titley, and others. *The Major Changers: Continuity or Discontinuity in the Career Decision Process.* JOURNAL OF VOCATIONAL BEHAVIOR. 8:1 (February, 1976) 105-110.

M.E., Ware, and Pooge, D. *Concomitants of Certainty in Career Related Choices.* VOCATIONAL GUIDANCE QUARTERLY, 28:4 (June, 1980) 322-327.

J.O. Crites, *Career Maturity Inventory. Attitude Scale, for A-1* (CTB/McGraw-Hill, Del Monte Research Park, Monterey, California, 1973).

- declared their major during their freshman year,
- changed their major only once,
- changed their major two or more times, and
- entered the university as provisional or advanced standing students.

The dependent variable was academic success measured by cumulative grade point average over a two year period, and change of major status measured by the number of changes. The independent variables were career maturity and college experience.

REVIEW OF THE LITERATURE

Change of Major and Academic Success

In 1967, Kwon reported the study of relationship between a measure of definiteness of vocational-educational goals and the academic success of University freshmen. Her findings indicated no statistically significant relationships between definiteness of vocational-educational goals and factors such as sex, birth order, socioeconomic status, predictive grade point average, or the number of areas of course work completed. She concluded that definiteness of vocational-educational goals did not add to existing information based on high school grades in predicting academic success? Condron investigated the effect on college graduation and selection of college major prior to admission. However, results of her study revealed that students who enter college undecided about their major were as likely to graduate as those who had already decided upon their major. It was assumed in her study that no difference occurred in the frequency of change of college major, or in frequency of college transfer.'

Then, in 1976, Titley explored the change of major of college students in relation to the ongoing developmental process of occupational choice. College students changing their mind about their intended major were asked specific questions regarding what job or career they were "headed for" in their new major and their old major. A significant number of students were able to be specific about their probable career choice when they made the change, but the proportion of students able to be specific in terms of their job choices declined significantly during the year. The seniors, however, were more specific than freshmen in defining a career area."

Most recently, Phillips examined the relationship between decision-making style, scholastic achievement, and vocational maturity of a group of freshmen. Using the Career Development Inventory (CDI) and the Assessment of Career Decision Making (ACDM) inventories, a modest relationship was found between decision-making style, scholastic achievement and vocational maturity.' Using the ACDM Rubinton found that decision making style contributed to vocational maturity and certainty of vocational choice. Ra-

⁴ L.T. Kwon, Certainty of vocational-educational plans and first year college achievement. Unpublished report, Bureau of Testing. University of Washington, Seattle, Washington 1967.

⁵ B. Condron, College major choice and its timing. Master's Thesis, Wilkes College, Wilkes-Barre, Pa., (1979).

⁶ R.S. Titley, and others.

⁷ S.D. Phillips and D.C. Strohmmer, Decision-making styles and vocational maturity. JOURNAL OF VOCATIONAL BEHAVIOR, 20:1 (April, 1982) 215-222.

tional decision makers did best with rational intervention, and intuitive decision makers did best with intuitive **intervention**.⁸

From a life span perspective, Gordon proposed considering student indecision regarding careers and college majors as developmental. Undecided students were normal, growing, predictable individuals in various stages of vocational and cognitive development. Furthermore, she asserted that use of a developmental approach in academic advising can lead students to greater vocational maturity over time? Ware examined the relationship between certainty of career related choices, careerdecision making skills, and educational preferences. Results of this study suggested that students may accept or reject career possibilities because of their level of satisfaction with present educational experiences. Students who experienced dissatisfaction with their majors were likely to experience uncertainty relative to their current career choices.¹⁰ Slaney concluded that expressed vocational choices should be carefully considered in dealing with career indecision. He found that career intervention had a small, but reliably measurable effect on changes in expressed choice. Results suggested that differential treatments seem appropriate. Some students need relatively little attention, while others may need considerable counselor support and other assistance."

From this brief review of the literature, it is apparent that few studies of career maturity, change of major, and academic achievement were concentrated on college students beyond their freshman year. Often, the term "undecided" was used to identify students who needed academic information and counseling support to select a college major. Yet the sophomore year is the typical time when students adjust their academic program of study. However, the undecided student may be choosing from alternatives that will eventually lead to graduation and successful entry into the world of work." The question addressed in this study is "Are there significant differences between those students who declare a major, and those who change their mind about a major, during their college enrollment in terms of academic success?"

METHOD OF STUDY

Students enrolled in an introductory course in the College of Human Development were asked to participate in a study of careerdecision making. From 650 students enrolled in the course who completed initial information, 80 were selected who were born in the years 1960-61. Those selected had completed the Career Maturity Inventory, Attitude Scale, form A-I, and were willing to participate in the study. Their academic records were examined two years later, during their senior year, to **determine** the number of times each student had changed majors within the university. In addition, their cumulative grade point average was determined.

⁸ N. Rubinton, *Instruction in Career Decision-making and Decision-making Styles*. JOURNAL OF COUNSELING PSYCHOLOGY, 27:6 (November, 1980) 581-588.

¹⁰ V.N. Gordon, *The Undecided Student: A Developmental Perspective*. PERSONNEL AND GUIDANCE JOURNAL, 59:7 (March, 1981) 433-439.

¹¹ M.E. Ware and D.L. Pooge

¹² R.B. Slaney, *Influence of Career Indecision on Treatments Exploring the Vocational Interests of College Women*. JOURNAL OF COUNSELING PSYCHOLOGY, 30:1 (January, 1983) 55-62.

¹³ J.O. Crites.

The Concept of Academic Success

Academic success was measured (A = 4, B = 3, C = 2, D = 1, F = 0) in terms of grades **earned** in college courses. A grade point average (GPA) is based on the grade (4.0) multiplied by number of credits (5) ~~for~~ each course which gives the total points to be divided by the number of credits completed. Each student was required to earn a C (2.00) cumulative grade point average in order to meet graduation requirements.

Instrument

The CAREER MATURITY INVENTORY (ATTITUDE SCALE), for A-1 (College Level) is concerned with measurement of the attitudes of college students toward the process of making a career choice and entering the world of work. The information from the 55 items is summed according to an agreement scale, and the total score is used to indicate level of career maturity. The higher the total score, the higher the level of career maturity assumed. The information is intended to be used in helping the student consider the process of choosing and planning for a successful career.

Change of Major Groupings

Students were divided into four groups according to their change of major status in their senior year:

1. Students entering college as four-year degree candidates, declaring a major within the college and continuing their enrollment toward the senior year.
2. Students entering a college as four-year degree candidates and changing their major **ONLY ONCE** from one college to another, or to another major within the same college, and continued their enrollment toward the senior year.
3. Students entering college as four-year degree candidates and changing their major **MORE THAN ONCE** from one college to another, or to another major within the same college, and continuing their enrollment toward the senior year.
4. Students enrolled in courses on a provisional basis, and proved themselves academically by earning a **2.00** cumulative grade point average (C) in 18 or more credits, were then admitted to a four-year degree program in the college, and then continued their enrollment toward the senior year.

Data Analysis

Data was analyzed using analysis of covariance. A **stepwise** multiple regression approach was used to remove variation in the dependent variable (academic success) due to the covariate (career maturity), and an analysis of variance was performed on the "corrected" scores.

Table I
ACADEMIC SUCCESS WITH
CAREER MATURITY AND CHANGE OF MAJOR

Source	Sum of squares	Df	Mean squares	F Ratio
COVARIATE				
CAREER MATURITY	27917.293	1	27917.293	9.593 0.003
MAIN EFFECT				
CHANGE OF MAJOR	4994.738	3	1664.913	0.572 0.635
EXPLAINED	32912.063	4	8228.016	2.827 0.031
RESIDUAL	218255.500	75	2910.073	
TOTAL	251167.563	79	3179.336	

GRAND MEAN = 2.74			ADJUSTED FOR INDEPENDENT + COVARIATE	
VARIABLE + CATEGORY	UNADJUSTED			
	N	DEV'N	BETA	DEV'N
CHANGE OF MAJOR				
THOSE WHO DECLARED	20	13.71		9.17
THOSE WHO CHANGED ONCE	20	2.66		6.38
THOSE WHO CHANGED MORE	20	-9.69		-9.27
THOSE PROVISIONAL	20	-6.69		-6.27
			0.16	
				0.14
MULTIPLE R SQUARED				0.131
MULTIPLE R				0.362

RESULTS OF THE STUDY

Table I revealed no significant differences between those who declared majors, changed once, changed more than once, and those who changed from provisional or advanced standing on the basis of academic success, i.e., cumulative grade point average. Differences were significant when correlated with career maturity scores on the CMI Attitude scale at the .01 percent level of confidence.

It can be observed from reviewing the mean scores for the four groups of students that those who declared majors, and made the fewest number of changes of major earned the highest cumulative grade point average.

Table II
GROUP COMPARISON
ACADEMIC SUCCESS (CUMULATIVE GRADE POINT AVERAGE)

Group	Mean	Observations	Std Dev
THOSE WHO DECLARED	2.87	20	.55
THOSE WHO CHANGED ONCE	2.76	20	.55
THOSE WHO CHANGED MORE	2.64	20	.49
THOSE WHO CHANGED PROV	2.62	20	.52

GROUP COMPARISON
CAREER MATURITY (CMI ATTITUDE SCALE SCORE)

Group	Mean	Observations	Std Dev
THOSE WHO DECLARED	38.54	20	.48
THOSE WHO CHANGED ONCE	39.25	20	.56
THOSE WHO CHANGED MORE	38.90	20	.64
THOSE WHO CHANGED PROV	38.21	20	.48

In Table II, the mean scores for the Career Maturity attitude scale are reported. Students that earned higher scores on the CMI attitude scale were those who declared a major, and students who changed from provisional or advanced standing earned the lowest mean scores on both scales.

DISCUSSION OF THE RESULTS

The answer to the question, "Are there significant differences between those students who declared a major and those who changed their mind during their college enrollment in terms of academic success?" was a resounding "maybe." The answer is a qualified "yes" if we only consider the interaction between career maturity and cumulative grade point average over a two year period and "no" if we consider only career maturity or academic success alone.

However, for those students in the various sub-groups, the differences between individuals probably rate higher in importance than the differences that occur between students who follow different **career/educational** paths in pursuing their plan of study in college. Differential treatments, if and when appropriate, should be based on criteria other than simply change of major status.

CONCLUSIONS

Change of major status had limited impact on the academic success of students participating in this study. Students who entered the university as a potentially higher risk were in the provisional and advanced standing status. They had the least opportunity to explore

various programs in the colleges, and had limited opportunities to consider alternatives with adequate support services within the degree structure of the university. They missed many opportunities available to underclassmen and often had rigorous demands placed on their chances to explore choices that existed. They had to perform well academically to demonstrate their ability to survive at the university, and become successful students in a degree program. However, differences that occurred between students in each of the sub-groups appear to be related to some combination of career maturity, or experience, and academic success over their enrollment period in the university, rather than a direct relationship to their change of major status.

If the concept of developmental advising is considered, then several routes are available to these students in terms of change of major status. The decision to change majors, or remain in the same major, was part of a developmental perspective available to the various sub-groups of students in the study.¹³ Change of major was one way undergraduate students were able to modify their **education/career** plans. Overall, students should be encouraged to develop appropriate career pathways within the university. Advisors should create opportunities which lead toward academic success and eventual graduation without concern for the number of times their students change their major.

¹³ V.N. Gordon.