

DOCUMENT RESUME

ED 086 102

HE 005 009

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TITLE Predictors of College Success.  
PUB DATE [74]  
NOTE 32p.

EDRS PRICE MF-\$0.65 HC-\$3.29  
DESCRIPTORS \*Academic Achievement; Bibliographies; \*College Students; Employment; Financial Needs; \*Higher Education; Marital Status; Racial Characteristics; Sex (Characteristics); Social Class; \*Success Factors; \*Withdrawal

ABSTRACT

Higher-education regents, administrators, and faculty often make decisions of inclusion and exclusion with regard to students and programs. There is abundant professional literature, opinions and/or research, related to college success. Specifically this paper includes summary statements and bibliographies of college academic achievement, college attrition, and factors related to achievement and attrition: social class, race, sex, marital status, financial aid, employment, and special programs. Almost 300 references are included as well as tentative conclusions. There is a need for multivariate action research. The information presented in this paper could be useful for research in individual colleges with specific groups. (Author)

ED 086102

PREDICTORS OF COLLEGE SUCCESS

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Higher-education regents, administrators, and faculty often make decisions of inclusion and exclusion with regard to students and programs. There is abundant professional literature, opinions and/or research, related to college success. Specifically this paper includes summary statements and bibliographies of college academic achievement, college attrition, and factors related to achievement and attrition: social class, race, sex, marital status, financial aid, employment, and special programs. Almost 300 references are included as well as tentative conclusions. There is a need for multivariate action research. The information presented in this paper could be useful for research in individual colleges with specific groups.

HE 005009

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## Predictors of College Success

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## I. Prediction of Academic Achievement

The research concerned with the prediction of college achievement has considered many single and multiple predictor variables. The literature is replete with reports studying the predictive validity of high school grades and achievement/aptitude test scores. Measures of reading ability, and more recently, biographical data, are also factors commonly studied for predictive purposes. While many factors are important, it appears that for the majority of students applying for college entrance, "the high school average (or class rank) is . . . the best single predictor of college grades; aptitude test scores . . . add appreciably to the accuracy of that prediction, and scores on tests in specific subject-matter areas add only a modest amount of predictive power to the combination of high school grades and aptitude test scores (Commission on Tests, 1970, p. 18)."

- Baird, L. L. and J. M. Richards, Jr. The Effects of Selecting College Students by Various Kinds of High School Achievement. ACT Research Reports, N. 23, Iowa City: American College Testing Program, Feb., 1968.
- Beanblossom, G. F. Biographical survey, part III: The use of biographic variables in predicting grades in major field criterion areas for UW freshmen, Seattle: Bureau of Testing, University of Washington, Sept., 1969.
- Book, W. F. "How Well Can College Students Read?" School and Society, 26:242-248, Aug., 1927.
- Cameron, H. K. "Nonintellectual Correlates of Academic Achievement," The Journal of Negro Education, 37:252-257, Summer, 1968.
- Cole, N. S. Differential Validity in the ACT Tests. ACT Research Report, No. 30, Iowa City: American College Testing Program, August, 1969.
- Commission on Tests. Report of the Commission on Tests: I. Righting the Balance, New York: College Entrance Examination Board, 1970.
- Fudge, J. W. "Predicting Academic Performance From Biographical Data," Dissertation Abstracts International, 32:3785, 7-A, January, 1972.

- Kornhauser, A. W. "Test and High School Records as Indicators of Success in an Undergraduate School of Business," Journal of Educational Research, 16:342-356, Dec., 1927.
- Landry, H. A. "The Relative Predictive Value of Certain College Entrance Criteria," Journal of Experimental Education, 5:256-260, March, 1937.
- Lanigan, M. A. "The Effectiveness of the Otis, the A.C.E., and the Minnesota Speed of Reading Test for Predicting Success in College," Journal of Educational Research, 41:289-296, Dec., 1947.
- Lindsay, C. A. and R. Althouse. Comparative Validities of the Strong Vocational Interest Blank Academic Scale and the College Student Questionnaire Motivation for Grades Scale. Student Affairs Research Report No. 68-2, University Park: Office of Student Affairs, Pennsylvania State University, June, 1968.
- Loeb, J. W. and D. J. Mueller, "The Use of a Scale of High Schools in Predicting College Grades," Educational and Psychological Measurement, 30:381-386, Summer, 1970.
- Lunneborg, C. E. "Biographic Variables in Differential vs. Absolute Prediction." Unpublished report, University of Washington, March, 1966, College Student Personnel Abstracts, 4:7, Fall, 1968.
- Lunneborg, P. W. and C. E. Lunneborg. "The Differential Prediction of College Grades from Biographic Information." Paper read at American Psychological Association, Sept., 1966, New York.
- Nelson, M. J. and E. C. Denny. "The Terman and Thurstone Group Tests as Criteria for Predicting College Success," School and Society, 26: 501-502, Oct., 1927.
- Nelson, M. J. "Some Data from Freshmen Tests," School and Society, 31: 772-774, June, 1930.
- Neville, D. "An Exploratory Study Comparing Successful and Unsuccessful University of Florida Students Classified as Average or Poor Readers," Dissertation Abstracts, 22:3525-2526, April, 1962.
- Pedrini, B. C. and D. T. Pedrini. "Reading Ability and Grades: A Brief Review." Unpublished paper, University of Nebraska at Omaha, 1972.
- Preas, N. B. "A Study of the Relationship Between Selected Variables and Academic Achievement in a Community College," North Carolina University, Department of Adult Education, Ed. D. Thesis, 1969, Washington, D. C.: Clearinghouse on Adult Education, Oct., 1970.
- Schmitz, S. B. "Predicting Success in College: A Study of Various Criteria," Journal of Educational Psychology, 28:465-473, Sept., 1937.

Schoenfeldt, L. F. "Nontest Variables in the Prediction of Educational Progress." Paper presented at the Annual Meeting of the American Psychological Association, Sept., 1970, Miami, U. S. Office of Education. Washington, D. C.: ERIC Clearinghouse on Tests, Measurements and Evaluation, 1971.

Seegers, J. and H. Rose. "Verbal Comprehension and Academic Success in College," Personnel and Guidance Journal, 42:295-296, Nov., 1962.

Spencer, R. E. and W. M. Stallings. "The Student Profile Section of the ACT Related to Academic Success," Journal of College Student Personnel, 9:177-179, May, 1968.

Stalnaker, J. M. "American Council Psychological Examination for 1926 at Purdue University," School and Society, 27:86-88, Jan., 1928.

Wellington, J. A. "Factors Related to the Academic Success of Resident Freshmen at a Midwestern Liberal Arts College During the Academic Year 1952-53," Dissertation Abstracts, 16:69, no. 1, 1956.

## II. Prediction of Attrition

The majority of data has suggested that students who persist, transfer, drop out, or flunk out can be discriminated on the basis of high school grades (or rank) and/or standardized test scores. These results were not unexpected. Since college performance, that is, GPA, is a major reason for withdrawal and high school and test performances are relatively reliable predictors of college achievement, it follows that these measures should be able to distinguish between high and low achieving students who withdraw or persist. In conclusion, college GPA, high school grades, and achievement/aptitude test scores have been identified as variables strongly related to college attrition, "but no one or two neatly packaged predictors of attrition have been found (Morgan, 1971, p. 3906-A)."

Aiken, J. "A Comparison of Junior College Withdrawals." Washington, D. C.: ERIC Clearinghouse on Junior Colleges, 1968.

Astin, A. W. "Recent Findings from the ACE Research Program: Implications for College Choice and Admissions," College and University, 44:341-356, Summer, 1969.

Astin, A. W. College Dropouts: A National Profile, ACE Research Reports, vol 7, no. 1. American Council on Education, Feb., 1972.

- Baber, B. B., Jr. and R. B. Caple. Educational Opportunity Grant Students: Persisters and Nonpersisters," Journal of College Student Personnel, 11:115-119, March, 1970.
- Blanchfield, W. C. "College Dropout Identification: A Case Study," Journal of Experimental Education, 40:1-4. Winter, 1971.
- Chase, C. I. The University Freshman Dropout. Indiana Studies Prediction, No. 6. Bureau of Educational Studies and Testing, Indiana University, 1965.
- Chase, C. I. "The College Dropout: His High School Prologue," Bulletin of the National Association of Secondary School Principals, 54:66-71, Jan., 1970.
- Conner, J. D. "The Relationship Between College Environmental Press and Freshman Attrition at Southern Methodist University," College and University, 43:265-273, Spring, 1968.
- Cope, R. G. "Limitations of Attrition Rates and Causes Given for Dropping out of College," Journal College Student Personnel, 9:386-392, Nov., 1968.
- Cope, R. G. "College Press and Dropouts." Paper read at American Educational Research Association, February, 1969, Los Angeles.
- Cope, R. G. and R. G. Hewitt. "Types of College Dropouts: An Environmental Press Approach," College Student Journal, 5:46-51, Sept.-Oct., 1971.
- Daniel, K. B. "A Study of College Dropouts with Respect to Academic and Personality Variables," Journal of Educational Research, 60:230-235, Jan., 1967.
- Flaum, L. S. "Point of View: 'Cop out'--'Push out'--'Drop out!' Why?" Innovation and Innovative Programs, No. 10, University of South Carolina, January, 1969, pp. 15-19.
- Gadzella, B. M. and G. Bentall. "Differences in High School Academic Achievements and Mental Abilities of College Graduates and College Dropouts," College and University, 42:351-356, Spring, 1967.
- Hammah, W. "Personality Differentials Between Lower Division Dropouts and Stay-ins," Journal of College Student Personnel, 12:16-19, Jan., 1971.
- Hanson, G. R. and R. G. Taylor. "Interaction of Ability and Personality: Another Look at the Drop-out Problem in an Institute of Technology," Journal of Counseling Psychology, 17:540-545, Nov., 1970.
- Hardie, V. S. and J. R. Anderson. Summary of an 'Open' Admission Policy, Personalized Individual Attention, and a Pass-Fail Grading System as Revealed in a Comprehensive Seven-Year Study of 1106 University Freshmen, Research Reports. Washington, D. C.: American Personnel and Guidance Association, 1971, pp. 91-93.



- Hendin, H. "The Psychodynamics of Flunking Out." Paper read at American College Health Association, April, 1972, Atlanta.
- Hoffman, P. W. "A Comparative Study of Student Retention and Attrition at Manchester College," Dissertation Abstracts International, 32: 738, 2-A, Aug., 1971.
- Iffert, R. E. Retention and Withdrawal of College Students. Washington, D. C.: U. S. Office of Education, Government Printing Office, 1958.
- Iffert, R. E. and B. S. Clarke. College Applicants, Entrants, Dropouts, Bulletin 1965, No. 29. Washington: Bureau of Educational Research and Development, U. S. Office of Education, 1965.
- Ikenberry, S. "Factors in College Persistence," Journal of Counseling Psychology, 8:322-329, Winter, 1961.
- Katzell, M. E. "Expectations and Dropouts in Schools of Nursing," Journal of Applied Psychology, 52:154-157, April, 1968.
- Kester, D. L. "Further Validation of the Nor Cal Questionnaire: Secondary Validation." U. S. Office of Education, Washington, D. C.: ERIC Clearinghouse on Junior Colleges, Jan., 1972.
- Knop, E. "From a Symbolic-interactionist Perspective: Some Notes on College Dropouts," Journal of Educational Research, 60:450-452, July-Aug., 1967.
- Krebs, R. E. and P. G. Liberty, Jr. A Comparative Study of Three Groups of Withdrawal Students on Ten Factor Variables Derived from a 36-Problem Self-Report Inventory. Austin: University of Texas, Feb., 1971.
- Miller, G. W. Success, Failure, and Wastage in Higher Education. London: George G. Harrap, 1970.
- Morgan, M. K. "The OPI, the ACT and University Attrition: A Discriminant Analysis," Dissertation Abstracts International, 31:3906-3907, 8-A, Feb., 1971.
- Morrissey, R. J. "Attrition in Probationary Freshmen," Journal of College Student Personnel, 12:279-285, July, 1971.
- Prediger, D. J. "Application of Moderated Scoring Keys to Prediction of Academic Success," American Educational Research Journal, 3: 105-111, March, 1966.
- "Relationship of Academic Predictors to College Success." Wisconsin State University, Stevens Point, Aug., 1969, Washington, D. C.: ERIC Clearinghouse on Higher Education, 1969.
- Robinson, L. F. "Relation of Student Persistence in College to Satisfaction with 'Environmental' Factors," Journal of Educational Research, 63:6-10, Sept., 1969.

- Rose, H. A. and C. F. Elton. "Attrition and the Vocationally Undecided Student," Journal of Vocational Behavior, 1:99-103, Jan., 1971.
- Rossmann, J. E. and B. A. Kirk. "Factors Related to Persistence and Withdrawal among University Students." Paper at American Educational Research Association, Feb., 1969, Los Angeles.
- Savicki, V., H. Schumer and R. E. Stanfield. "Student Role Orientations and College Dropouts," Journal of Counseling Psychology, 17:559-566, Nov., 1970.
- Sensor, P. "Follow-up of 1965 Freshmen Who Did Not Return for Fall Semester, 1966." Riverside City College, California, May, 1967, Washington, D. C.: ERIC Clearinghouse on Junior Colleges, 1967.
- Spady, W. G. "Peer Integration and Academic Success: Toward a Sociological Model of Undergraduate Attrition." Paper read at the American Educational Research Association, Feb., 1968, Chicago.
- Spady, W. G. "Dropouts from Higher Education: Toward an Empirical Model," Interchange, 2:38-62, No. 3, 1971.
- Starr, A., E. Betz and J. Menne. "Differences in College Student Satisfaction: Academic Dropouts, Nonacademic Dropouts and Nondropouts," Journal of Counseling Psychology, 19:318-322, July, 1972.
- Trapp, D., K. Falthorp and R. Cope. "Entrance Characteristics and Their Relationship to Types of Student Dropouts," Institutional Research and Institutional Policy Formulation: 11th Annual Forum of the Association for Institutional Research 1971. Claremont: Office of Institutional Research, Dec., 1971, pp. 119-122.
- Vaughan, R. P. "Involvement in Extracurricular Activities and Dropout," Journal of College Student Personnel, 9:60-61, Jan., 1968.
- Vaughan, R. P. "College Dropouts: Dismissed vs. Withdrew," Personnel and Guidance Journal, 46:685-689, March, 1968.
- Who Clears Probation, Report Series 6, Series No. 1. Stevens Point: Office of Institutional Research, Jan., 1972.
- Wood, S. E. "Relationship of Certain Nonintellective Factors to Persistence." Washington, D. C.: ERIC Clearinghouse on Junior Colleges, 1968.
- Zaccaria, L. and J. Creaser. "Factors Related to Persistence in an Urban Commuter University," Journal of College Student Personnel, 12:286-291, July, 1971.

### III. Factors Related to Academic Achievement and Attrition

The research literature has generally indicated that 1) high school grades and standardized test scores are the best predictors of academic

achievement in college and that 2) college grade point average is a major determinant of college attrition. While these relationships are relatively stable for the majority of students, they appear to waver with students having culturally different backgrounds. There are many other factors which may be instrumental in altering the validity of high school performance, entrance examinations, and college performance (Miller, 1970). This section will include summaries and bibliographies of some of the related factors:

Socioeconomic Level: Economically Disadvantaged

Minority: Race

Sex

Marital Status

Financial Aid

Employment

Special Programs

A. Socioeconomic Level: Economically Disadvantaged

It appears that socioeconomic level is directly related to college accessibility--low income students are less likely to attend college. Generally, the research literature has shown that low socioeconomic level is associated with: lower general achievement/aptitude test scores; variable college success, and a higher dropout rate.

"Academically Disadvantaged Minority Group Students in Public Two Year Colleges." Pennsylvania State Department of Education, Harrisburg, Bureau of Curriculum Development and Education, Oct., 1971, Washington, D. C.: ERIC Clearinghouse on Junior Colleges, April, 1972.

Baird, L. L. Family Income and the Characteristics of College Bound Students, ACT Research Reports, No. 17. Iowa City: American College Testing Program, Feb., 1967.

Binford, K. D. "An Analysis of the Effect of Intelligence on the Relationship Between Socio-economic Status and Academic Achievement," Sociological Focus, 4:27-37, 4, Summer, 1971.

- Brandson, H. R. "Financing Higher Education for Poor People: Fact and Fiction," College Board Review, 77:5-9, Fall, 1970.
- Butzow, J. W. and C. M. Williams. "College Freshman Achievement of Parochial and Public Secondary School Graduates," Journal of Educational Research, 60:215-217, Jan., 1967.
- Crossland, F. E. Minority Access to College, A Ford Foundation Report. New York: Schocken, 1971.
- DeBlasie, R. R. and K. Boswell. "The Culturally Disadvantaged College Student," Journal of the National Association of Women Deans and Counselors, 35:126-132, Spring, 1972.
- Dispenzieri, A., S. Giniger, W. Reichman, and M. Levy. "College Performance of Disadvantaged Students as a Function of Ability and Personality," Journal of Counseling Psychology, 18:298-305, July, 1971.
- Dudley, D. A. "College Entrance Tests and the Disadvantaged Student," National ACAC Journal, 13:13-15, Feb., 1969.
- Gurin, P. and E. Epps, "Some Characteristics of Students from Poverty Backgrounds Attending Predominantly Negro Colleges in the Deep South," Social Forces, 66:27-40, Sept., 1966.
- Kamens, D. H. "Social Class, College Contexts, and Educational Attainment: Social Class and College Dropout." Paper read at American Sociological Association, August, 1968, Boston.
- Lane, H. W. "Admissions Procedures in Transition: Some Interrelations," IRCD Bulletin, 5:3, Winter, 1969.
- McGrath, E. J. (Ed.) The Liberal Arts College's Responsibility for the Individual Student. New York: Columbia University, Teachers College Press, 1966, pp. 86-120.
- Merritt, R. "Academic Performance of Work-Study Students," Journal of College Student Personnel, 11:173-176, May, 1970.
- Miller, G. W. Success, Failure, and Wastage in Higher Education. London: George G. Harrap, 1970.
- Moon, W. The Auburn Student: A Demographic Study of the Freshmen Class of Auburn University, 1964-1965. Auburn, Alabama: Student Counseling Service, Auburn University, July, 1966.
- Nam, C. "Group Disparities in Educational Participation and Achievement, IV. Conference on Policies for Educational Growth." Paris, France, June 3-5, 1970, Washington, D. C.: ERIC Clearinghouse on Educational Administration, 1971.

- Orwig, M. D. Toward More Equitable Distribution of College Student Aid Funds: Problems in Assessing Student Financial Need, ACT Research Report. No. 43. Iowa City: American College Testing Program, 1971.
- Panos, R. J. and A. W. Astin. "Attrition among College Students," Paper read at American Educational Research Association, February, 1967, New York.
- Pedrini, B. C. and D. T. Pedrini, "Intelligent Intelligence Testing." University of Nebraska at Omaha, 1972, Washington, D. C.: ERIC Clearinghouse on Tests, Measurement, and Evaluation, 1973.
- Rhodes, L. L. and R. B. Caple. "Academic Aptitude and Achievement of Educational Opportunity Grant Students," Journal of College Student Personnel, 11:387-390, Nov., 1969.
- Sewell, W. H. and V. P. Shah. "Socioeconomic Status, Intelligence and the Attainment of Higher Education," Sociology of Education, 40:1-23, Winter, 1967.
- Sewell, W. H. "Inequality of Opportunity for Higher Education," American Sociological Review, 36:793-809, Oct., 1971.
- Spady, W. G. "Dropouts from Higher Education: Toward an Empirical Model," Interchange, 2:38-62, No. 3, 1971.
- Trapp, D., K. Pailthorp and R. Cope. "Entrance Characteristics and Their Relationships to Types of Student Dropouts," Institutional Research and Institutional Policy Formulation: 11th Annual Forum of the Association for Institutional Research 1971. Claremont: Office of Institutional Research, Dec., 1971, pp. 119-122.
- Trent, J. W. "A New Look at Recruitment Politics," College Board Review, 58:7-11, Winter, 1965-1966.
- Wegner, E. L. and W. H. Sewell. "The Relation of Type of College Attended to Graduation." Paper read at American Sociological Association, August, 1968, Boston.
- West, E. D. Financial Aid to the Undergraduate. Washington, D. C.: American Council on Education, 1963.
- Worthington, L. H. and C. W. Grant. "Factors of Academic Success: A Multivariate Analysis," Journal of Educational Research, 65:7-10, Sept., 1971.

#### B. Minority: Race

Minority access to higher education has been limited indirectly by the use of traditional selection criteria, especially standardized tests scores.

Such tests are empirically established measures for the prediction of academic performance, though they are often assailed as carrying a built-in cultural bias. The charge of bias is true in that the tests are related to dominant, i.e., white, cultural patterns (Bowles & DeCos 1971, p. 185).

But it is also true that these tests generally tend to accurately measure a person's ability to do quality work in college (Jaffe, Adams & Myers, 1968). "In other words, culturally biased or not, the tests are all too accurate in their measurement of any handicap with respect to college preparation (Jaffe, et al., 1968, p. 252).

It is apparent that the predictive validity of entrance tests for Black achievement and attrition varies with the racial makeup of the institution's student body and the population employed to develop regression equations. The research literature generally suggests that Negroes at predominantly White institutions tend to: 1) obtain higher test scores than Negroes at traditionally Black institutions; 2) obtain lower test scores than Whites at predominantly White institutions, and 3) obtain grades in keeping with their test scores, that is, lower grades than Whites, if they are not participating in special programs. On the basis of the research literature, race should be considered when attempting to predict success at college. Separate regression equations for Blacks and Whites have been recommended to enhance the validity of predictions made from standardized test scores.

Altman, R. A. and P. O. Snyder. The Minority Student on Campus: Expectations and Possibilities. Boulder: Western Interstate Commission for Higher Education, 1971.

Archie, M. J. "Observations on Minority Group Education," Journal of the Association of College Admissions Counselors, 13:23-25, June, 1968.

Astin, A. W. "Racial Considerations in Admissions," The Campus and the Racial Crisis: Background Papers for Participants in the 1969 Annual Meeting of the American Council on Education. Washington: The Council, 1969, pp. 65-93.

- Astin, A. W. "Recent Findings from ACE Research Program: Implications for College Choice and Admissions," College and University, 44:341-356, Summer, 1969.
- Astin, A. W. College Dropouts: A National Profile, ACE Research Reports, vol. 7, no. 1 American Council on Education, Feb., 1972.
- Backman, M. E. "Patterns of Mental Abilities: Ethnic, Socioeconomic, and Sex Differences," American Educational Research Journal, 9:1-12, 1, Winter, 1972.
- Berger, L. "White Coat Versus Cap and Gown." Paper read at American Orthopsychiatric Association, April, 1969, New York.
- Bindman, A. M. "Pre-College Preparation of Negro College Students," Journal of Negro Education, 35:313-321, Fall, 1966.
- Borger, F. H. "Differential Expectations? Predicting Grades for Black Students in Five Types of Colleges," Measurement and Evaluation in Guidance, 4:206-212, 4, Jan., 1972.
- Borup, J. H. "The Validity of the American College Test for Discerning Potential Academic Achievement Levels: Ethnic and Sex Groups," Journal of Educational Research, 65:3-6, 1, Sept., 1971.
- Bowles, F. and F. A. DeCosta. Between Two Worlds. New York: McGraw Hill, 1971.
- Brandson, H. R. "Financing Higher Education for Poor People: Fact and Fiction," College Board Review, 77:5-9, Fall, 1970.
- Clark, K. B. and L. Plotkin. The Negro Student at Integrated Colleges. New York: National Scholarship Service and Fund for Negro Students, 1963.
- Coffman, W. E. "Developing Tests for the Culturally Different," School and Society, 93:430-433, Nov., 1965.
- Crossland, F. E. Minority Access to College, A Ford Foundation Report. New York: Schocken, 1971.
- Davis, J. A. and S. E. Kerner. The Validity of Tests and Achievement in High School for Predicting Initial Performance in the Public Universities of North Carolina with Special Attention to Black Students. Report No. PR-71-3. Princeton: Educational Testing Service, March, 1971.
- Davis, J. A. and G. Temp. "Is the SAT Biased Against Black Students?" College Board Review, 81:4-9, Fall, 1971.
- Davis, S. C., J. W. Loeb and L. F. Robinson. "A Comparison of Characteristics of Negro and White College Freshman Classmates," Journal of Negro Education, 39:359-366, Fall, 1970.

- Deutsch, M., I. Katz and A. Jensen. (Eds.). Social Class, Race and Psychological Development. New York: Holt, Rinehart, and Winston, 1968, 86-114.
- Dudley, D. A. "College Entrance Tests and the Disadvantaged Student," National ACAC Journal, 13:13-15, Feb., 1969.
- Epstein, E. H. "Social Class, Ethnicity and Academic Achievement: A Cross-Cultural Approach," Journal of Negro Education, 41:202-215, 3, Summer, 1972.
- Flaughter, R. L. "Testing Practices, Minority Groups, and Higher Education: A Review and Discussion of the Research." Princeton: Educational Testing Service, Washington, D. C.: ERIC Clearinghouse on Tests, Measurements, and Evaluations, June, 1970.
- Flaughter, R. L. Patterns of Test Performance by High School Students of Four Ethnic Identities, Project Access Research Report No. 2, Princeton: Educational Testing Service, 1971.
- Flaughter, R. L. Minority Versus Majority Group Performance on an Aptitude Test Battery, Project Access Research Report, No. 3, Princeton: Educational Testing Service, Aug., 1971.
- Flaughter, R. and D. A. Rock. "Patterns of Ability Factors among Four Ethnic Groups," Proceedings of the Annual Convention of the American Psychological Association, vol. 7 (pt. 1), Princeton: Educational Testing Service, 1972, pp. 27-28.
- Gordon, E. W. "Access to Higher Education," IRCD Bulletin, 8:7-10, Feb., 1972.
- Goslin, D. A. "What's Wrong with Tests and Testing--Part 1," College Board Review, 65:12-18, Fall, 1967.
- Green, D. R. "Racial and Ethnic Bias in Test Construction. Final Report." Monterey: CTB/McGraw Hill, Sept., 1971, Washington, D. C.: ERIC Clearinghouse on Tests, Measurements, and Evaluation, Feb., 1972.
- Hall, J. W. "The Effects of Supportive Services for Disadvantaged College Students," Dissertation Abstracts International, 32:3686-3687, 7-A, Jan., 1972.
- Harnett, R. T. "Differences in Selected Attitudes and College Orientations Between Black Students Attending Traditionally Negro and Traditionally White Institutions," Sociology of Education, 43:419-436, 4, Fall, 1970.
- Harris, J. and J. Reitzel. "Negro Freshmen Performance in a Predominantly Non-Negro University," Journal of College Student Personnel, 8:366-368, Nov., 1967.



- Hascall, O. W. "Predictability of College Grades: Differences Between Two Apparently Like Colleges." Paper read at Association of Institutional Research, May, 1967, Athens, Georgia.
- Haven, E. W. and D. W. Horch. "How College Students Finance Their Education," Financial Aid News, No. 8. New York: College Scholarship Service/College Entrance Examination Board, 1972, p. 8.
- Horowitz, J. L., W. E. Sedlacek and G. C. Brooks, Jr. Correlates of Black and White University Student Grades Beyond the Freshman Year, Research Report No. 7-72. Cultural Study Center, University of Maryland, 1972.
- Jaffe, A. J., W. Adams and S. Meyers. Negro Higher Education in the 1960's. New York: Praeger, 1968.
- Kallingal, A. "The Prediction of Grades for Black and White Students at Michigan State University," Journal of Educational Measurements, 8:263-265, Winter, 1971.
- Kendrick, S. A. "The Coming Segregation of Our Selective Colleges," College Board Review, 66:6-13, Winter, 1967-68.
- Kendrick, S. A. and C. L. Thomas. "Transition from School to College," Review of Educational Research, 40:151-179, Feb., 1970.
- Lane, H. W. "Where Do Black Students Go to College and Why?" National ACAC Journal, 16:22-24, Sept., 1971.
- Lesser, G. S., G. Fifer and D. H. Clark. "Mental Abilities of Children from Different Social Class and Cultural Groups," Monographs of the Society for Research in Child Development, 30 (4), 1965.
- Munday, L. "Predicting College Grades Using ACT Data," Educational and Psychological Measurement, 27:401-406, Summer, 1967.
- Pandey, R. E. "The SCAT and Race," Psychological Reports, 28:459-462, 2, April, 1971.
- Pfeifer, C., M. Michael and W. E. Sedlacek. "The Validity of Academic Predictors for Black and White Students at a Predominantly White University," Journal of Educational Measurement, 8:253-261, 4, Winter, 1971.
- Roberts, S. O. Studies in Identification of College Potential. Nashville: Fisk University, 1962.
- Sampel, D. D. and W. R. Seymour. "The Academic Success of Black Students: A Dilemma," Journal of College Student Personnel, 12:243-247, July, 1971.
- Sedlacek, W. E., G. C. Brooks, Jr. and J. L. Horowitz. Black Admissions to Large Universities: Are Things Changing? Research Report No. 3-71. Cultural Study Center, University of Maryland.

- Social and Economic Status of Negroes in the United States, 1969, The. Washington, D. C.: BLS Report No. 375; Current Population Reports, Series P-23, No. 29.
- Stanley, J. C. Relative Predictability of Freshman Grade-Point Average from SAT Scores in Negro and White Southern Colleges. Madison: Laboratory of Experimental Design, University of Wisconsin, 1966, Mimeographed.
- Stanley, J. C. "Predicting College Success of the Educationally Disadvantaged," Science, 171:640-647, 3972, Feb., 1971.
- Stanley, J. C., A. B. Biaggio and A. C. Porter. "Relative Predictability of Freshmen Grade Point Averages from SAT Scores in Negro and White Southern Colleges." Paper read at American Research Association and the National Council on Measurement in Education, Feb., 1966, Chicago.
- Stanley, J. C. and A. C. Porter. "Correlation of Scholastic Aptitude Test Scores with College Grades for Negroes Versus Whites," Journal of Educational Measurement, 4:199-217, Winter, 1967.
- Temp, G. "Validity of the SAT for Blacks and Whites in Thirteen Integrated Institutions," Journal of Educational Measurement, 8:245-257, Winter, 1971.
- Watley, D. J. Black and Nonblack Youth: Characteristics and College Attendance Patterns, NMSC Research Reports, vol. 7, no. 4. National Merit Scholarship Corporation, 1971.
- Werner, E. E., K. Simonian and R. S. Smith. "Ethnic and Socioeconomic Status Differences in Abilities and Achievement among Preschool and School-Age Children in Hawaii," Journal of Social Psychology, 75: 43-59, 1968.
- Willingham, W. W. Free-Access Higher Education. New York: College Entrance Examination Board, 1970.
- Willingham, W. W. "Educational Opportunity and the Organization of Higher Education." Paper presented at the College Entrance Examination Board Colloguium on "Barriers to Higher Education," June, 1970, Racine.
- Wilson, K. M. Black Students Entering CRC Colleges: Their Characteristics and Their First-Year Academic Performance, Research Memorandum No. 69-1. College Research Center, Vassar College, April, 1969.

#### C. Sex

Sex differences exist in college attendance, academic prediction, and college success. Low ability women find it more difficult to enter institutions of higher education. Women in college, in terms of academic

average, tend to do better than men but this is probably the result of selection procedures. Women also tend to have higher dropout rates. On the basis of the research literature, predictions of achievement and attrition may be enhanced when sex is taken into consideration.

Adams, B. N. and M. T. Meidam. "Economics, Family Structure, and College Attendance," American Journal of Sociology, 74:230-239, Nov., 1968.

Astin, A. W. "Recent Findings from the ACE Research Program: Implications for College Choice and Admissions," College and University, 44: 341-356, Summer, 1969.

Astin, A. W. College Dropouts: A National Profile, ACE Research Reports, vol. 7, no. 1. American Council on Education, Feb., 1972.

Baron, A. R. "Non-Intellective Variables Related to Successful and Unsuccessful Students in a Junior College." Unpublished report, 1968, College Student Personnel Abstracts, 5:1-2, Fall, 1969.

Borup, J. H. "The Validity of the American College Test for Discerning Potential Academic Achievement Levels: Ethnic and Sex Groups," Journal of Educational Research, 65:3-6, 1, Sept., 1971

Bowers, J. "Factor Structures and Predictive Validities of College Ability Tests for Regularly Admitted and Disadvantaged Beginning Freshmen at the University of Illinois." Paper read at American Educational Research Association, March, 1970, Minneapolis.

Boyd, J. D. "The Relative Prognostic Value of Selected Criteria in Predicting Academic Success at Northwestern University," Dissertation Abstracts, 15:1780, Dec., 1955.

Buszek, B. R. "Differential Treatment of Test Scores," College and University, 43:294-307, Spring, 1968.

Cherdack, A. M. "The Predictive Validity of the Scholastic Aptitude Test for Disadvantaged College Students Enrolled in a Special Education Program, Final Report." Office of Education, Washington, D. C., Bureau of Research, Washington, D. D.: ERIC Clearinghouse on Higher Education, Oct., 1971.

Cope, R. G. "Sex-Related Factors and Attrition among College Women," Journal of the National Association of Women Deans and Counselors, 33:118-124, Spring, 1970.

Flora, L. "Predicting Academic Success at Lynchburg College from Multiple Correlation Analyses of Four Selected Predictor Variables," Dissertation Abstracts, 27:2276, 8-A, 1967.

- Foster, J. M. and D. D. Jenkins. KSU Freshmen, 1960-64 Potential Ability (ACT) and Obtained Grades. Studies in Student Personnel Work Research Reports No. 30. Student Counseling Center, Kansas State University, Dec., 1965.
- Hill, A. H. "A Longitudinal Study of Attrition among High Aptitude College Students," Journal of Educational Research, 60:166-173, Dec., 1966.
- Irvine, D. W. "Graduation and Withdrawal: An Eight-Year Follow-Up," College and University, 41:32-40, Fall, 1965.
- Irvine, D. W. "Estimated Grades and Freshmen Achievement," Vocational Guidance Quarterly, 13:193-195, March, 1965.
- Langen, T. D. F. "Sex Status and the Prediction of Academic Performance." Unpublished report, University of Washington, 1966, College Student Personnel Abstracts, 2:280, Spring, 1967.
- Lindsay, C. A. and R. Althouse. Comparative Validities of the Strong Vocational Interest Blank Academic Scale and the College Student Questionnaire Motivation for Grades Scale. Student Affairs Research Report No. 68-2. University Park: Office of Student Affairs, Pennsylvania State University, June, 1968.
- Lowman, R. P. and D. W. Spuck. "Variables Related to College Success for the High-Risk Student." Paper read at Western Psychological Association, April, 1971, San Francisco.
- Michael, W. B., R. A. Jones, A. Cox, A. Gershon, M. Hoover, K. Katz and D. Smith, "High School Record and College Board Scores as Predictors of Success in a Liberal Arts Program during the Freshman Year of College," Educational and Psychological Measurement, 22:399-400, Feb., 1962.
- Siegelman, M. "SAT and High School Average Predictions of Four Year College Achievement," Educational and Psychological Measurement, 31:947-950, 4, Winter, 1971.
- Spiegel, D. and P. Keith-Spiegel. "Multiple Predictors of Course Grades for College Men and Women," Journal of College Student Personnel, 12: 44-48, 1, Jan., 1971.
- Stanley, J. C. "Further Evidence via the Analyses of Variance that Women are more Predictable Academically than Men," Ontario Journal of Educational Research, 10:49-56, Jan., 1967.
- Veldman, D. J. "Effects of Sex, Aptitudes, and Attitudes on the Academic Achievement of College Freshmen," Journal of Educational Measurement, 5:245-249, Fall, 1968.
- Walster, E., T. A. Cleary and M. M. Clifford. "Research Note: The Effect of Race and Sex on College Admission," Sociology of Education, 44: 237-244, Spring, 1970.

- Wechsler, D. The Measurement and Appraisal of Adult Intelligence. 4th ed., Baltimore: Williams and Wilkins, 1958.
- Young, K. E. Access to Higher Education. American Association of State Colleges and Universities, April, 1971.
- Yuker, H. E., P. Lichtenstein and P. Witheiler. Who Leaves Hofstra for What Reasons, Research Report No. 102. Center for the Study of Higher Education, Hofstra University, May, 1972.
- D. Marital Status
- Marital status does not seem to have a significant effect upon achievement but is strongly related to college attendance and attrition. Marriage is negatively associated with college attendance, especially for women and more so for Whites than Blacks. Married students are also more apt to drop out, but this may be associated with financial and emotional difficulties.
- Aiken, J. "A Comparison of Junior College Withdrawees." Washington, D. C.: ERIC Clearinghouse on Junior Colleges, 1968.
- Bayer, A. E. The Black College Freshman: Characteristics and Recent Trends. ACE Research Reports, vol. 7, no. 3. American Council on Education, Oct., 1972.
- Clarke, C. Marriage and College Life, Marriage and College Life Project, Department of Student Health, University of Florida, May, 1969.
- D'Amico, L. A. "Changes in Number of Married Students in Indiana Institutions: 1956-57 to 1965-66," College and University, 43: 178-184, Winter, 1968.
- Dole, A. A. "Iffert Revisited: Persisters and Defaulters," Journal of College Student Personnel, 10:185-192, May, 1969.
- Eshleman, J. R. and C. L. Hunt. "Social Class Influences on Family Adjustment Patterns of Married College Students." Paper read at American Sociological Association, August, 1966, Miami Beach.
- Hildebrand, V. "Academic Orientation of College Students' Wives," Personnel and Guidance Journal, 45:597-599, . . ., 1967.
- Iffert, R. E. and B. S. Clarke. College Applicants, Entrants, Dropouts, Bulletin 1965, No. 29. Washington: Bureau of Educational Research and Development, U. S. Office of Education, 1965.
- Irvine, D. W. "University Dropouts in Good Standing," Journal of the Association of College Admissions Counselors, 12:13-17, No. 1, 1967.

Klein, R. B. and F. A. Synder. "Non-Academic Characteristics and Academic Achievement," Journal of College Student Personnel, 10:328-332, Sept., 1969.

Mason, W. R., Jr. "Problems of Married College Students: Health Education Implications," Journal of the American College Health Association, 14:270-276, April, 1966.

Schleman, H. B. "Educational Planning for Wives of Men Students," Journal of the National Association of Women Deans and Counselors, 33:23-26, Fall, 1969.

Sharp, W. H. and H. A. Marra. "Factors Related to Classification of Client Problems, Number of Counseling Sessions, and Trends of Client Problems," Journal of Counseling Psychology, 18:117-122, March, 1971.

Watley, D. J. Career or Marriage?: A Longitudinal Study of Able Young Women, NMSC Research Reports, vol. 5, no. 7. National Merit Scholarship Corporation, 1969.

Watley, D. J. Black and Non-Black Youth: Does Marriage Hinder College Attendance? NMSC Research Reports, vol. 7, no. 5, National Merit Scholarship Corporation, 1972.

#### E. Financial Aid

Financial aid is a major means of enabling greater student access to higher education. It appears that financial aid may not directly enhance academic achievement but students receiving assistance exhibit a higher persistence rate. It is important to note that low income students exhibit a higher persistence rate when they have been awarded financial aid.

Astin, H. S., A. W. Astin, A. S. Bisconte and H. H. Frankel. Higher Education and the Disadvantaged Student. Washington: Human Services Press, 1972.

Crossland, F. E. Minority Access to College, A Ford Foundation Report. New York: Schocken, 1971.

Demos, G. D. "Analysis of College Dropouts--Some Manifest and Covert Reasons." Paper read at American Personnel and Guidance Association, March, 1967, Dallas.

Ferrin, R. "Barrier to Universal Higher Education." Palo Alto, California: College Entrance Examination Board, Washington, D. C.: ERIC Clearinghouse on Higher Education, March, 1970.

- Gladioux, L. and L. D. Rice. "Report from the Washington Office," Financial Aid News, Vol. 2, No. 4. New York: College Scholarship Service/College Entrance Examination Board, March, 1973, p. 5.
- Iffert, R. E. Retention and Withdrawal of College Students. Bulletin 1958, No. 6. Washington: DHEW, Government Printing Office, 1957, Washington, D. C.: ERIC Clearinghouse on Higher Education, Feb., 1972.
- Iffert, R. E. and B. S. Clarke. College Applicants, Entrants, Dropouts, Bulletin 1965, No. 29. Washington: Bureau of Educational Research and Development, U. S. Office of Education, 1965.
- Kester, D. L. "California Community Stopouts: A Comparison of Three Nor Cal - CCHE Follow-up Studies." U. S. Office of Education, DHEW, Division of Academic Facilities, Dec., 1971, Washington, D. C.: ERIC Clearinghouse on Junior Colleges, April. 1972.
- Kinney, R. G. "The Effect of Scholarship Aid upon the Academic Achievement and Persistence of Washington State University Undergraduates," Dissertation Abstracts International, 31:3903-A, 8-A, Feb., 1971.
- Klopf, G. J. (Ed.). College Student Personnel Work in the Years Ahead. Washington: American Personnel and Guidance Association, 1966, pp. 60-68.
- McGrath, E. J. (Ed.). The Liberal Arts College's Responsibility for the Individual Student. New York: Columbia University Teachers College Press, 1966, pp. 86-120.
- Orwig, M. D. Toward More Equitable Distribution of College Student Aid Funds: Problems in Assessing Student Financial Need, ACT Research Report, No. 43. Iowa City: American College Testing Program, 1971.
- Rhodes, L. L. and R. B. Caple. "Academic Aptitude and Achievement of Educational Opportunity Grant Students," Journal of College Student Personnel, 11:387-390, Nov., 1969.
- Sanford, N. (Ed.). The American College. New York: Wiley, 1962.
- Yuker, H. E., P. Lichtenstein and P. Witheiler. Who Leaves Hofstra for What Reasons, Research Report No. 102. Center for the Study of Higher Education, Hofstra University, May, 1972.

#### F. Employment

A large number of students are employed during their undergraduate years. Many low-income financial-aid recipients are employed part time with no ill effects in terms of grade point average. It appears that part time employment of fifteen hours or less does not have negative

effect on achievement, regardless of whether a student is receiving some type of financial assistance or not.

Augsberger, J. D. An Analysis of Academic Performance of Working and Non-Working Students on Academic Probation at Northern Illinois University. University of Missouri, 1971.

Babbush, H. E. and M. V. Neal. "The College Work-Study Program," Journal of College Placement, 28:103-107, April-May, 1968.

Baird, L. L. Family Income and the Characteristics of College Bound Students, ACT Research Reports, No. 17. Iowa City: American College Testing Program, Feb., 1967.

Baron, A. R. "Non-Intellective Variables Related to Successful and Unsuccessful Students in a Junior College." Unpublished report, 1968, College Student Personnel Abstracts, 5:1-2, Fall, 1969.

"California Student Resource Survey," Financial Aid News, vol. 2, no. 4. New York: College Scholarship Service/College Entrance Examination Board, March, 1973, pp. 2-3.

Carmody, J. F., R. H. Fenske and C. S. Scott. Changes in Goals, Plans, and Background Characteristics of College-Bound High School Students. ACT Research Report, No. 52. Iowa City: American College Testing Program, August, 1972.

Carpenter, E. "A Study of Needs and Activities of Financial Aid Recipients and Non-Recipients," Journal of Student Financial Aid, 1:8-17, Nov., 1971.

Farmer, M. L. (Ed.). Student Personnel Services for Adults in Higher Education. Metuchen, N. J.: Scarecrow Press, 1967, pp. 136-148.

Financial Aid Handbook for Counselors in Nebraska Schools. 2nd edition. Nebraska Association of Student Financial Aid Administrators.

Hamerlik, G. F. and J. E. Brown. "A Comparison of Working and Non-Working Freshmen's First Semester Grade Point Average at the University of North Dakota," College of Education Record of the University of North Dakota, 55:10-11, Oct., 1969.

Hay, J. E., K. Evans and C. A. Lindsay. "Student Part-Time Jobs: Relevant or Non-Relevant," Vocational Guidance Quarterly, 19:113-118, Dec., 1970.

Hay, J. E. and C. A. Lindsay. "The Working Student: How Does He Achieve?" Journal of College Student Personnel, 10:109-114, March, 1969.

Henry, J. B. "Part-Time Employment and Academic Performance of Freshmen," Journal of College Student Personnel, 8:257-260, July, 1967.



"How Part-Time Work Affects Academic Performance," Journal of College Placement, 29:104, April-May, 1969.

Kaiser, H. E. and G. Bergen. "Shall College Freshmen Work?" Journal of College Student Personnel, 9:384-385, Nov., 1968.

Kelly, B. B. "An Analysis of Various Types of Financial Aid and Academic Achievement at the University of Illinois," Dissertation Abstracts International, 31:4550-A, 9-A, March, 1971.

Klingelhofer, E. L. "Do Race and Economics Decide Who Gets What?" Journal of Student Financial Aid, 1:34-45, May, 1971.

LeGrand, W. B., F. Piercy and G. Panos. The Effects of Holding a Work Study Job on the Academic Achievement of First Semester Freshmen at the University of South Carolina, Research Notes No.9. Division of Student Affairs, University of South Carolina, May, 1970.

Schlekat, G. A. "Financial Aid Decisions and the Socioeconomic Class of Applicants," Journal of College Student Personnel, 9:146-149, May, 1968.

#### G. Special Programs

Special programs developed for regular students with minor academic deficits are often remedial and involve reading skills. Variable results are reported depending on the evaluative criteria used. Special programs for "high-risk" students, that is disadvantaged/minority students and/or marginal admission students, are typically remedial in nature. But often disadvantaged/minority students also have programs which emphasize student cultural background. Attrition rate is the most common criterion used to evaluate special programs for disadvantaged persons; the majority of studies report impressive results (compared to the alternative of no special programs). Studies which evaluated the academic achievements (grades) of special program participants revealed variable results. It appears that while special programs are able to keep high-risk disadvantaged/minority students in school, they may not enhance these students' ability to learn independently. The predictive use of general achievement/aptitude tests is problematic with students enrolled in programs

designed to offset deficits. Typically, the test scores of students participating in special programs underestimate performance.

"Academically Disadvantaged Minority Group Students in Public Two Year Colleges." Harrisburg: Pennsylvania State Department of Education, Bureau of Curriculum Development and Education, Oct., 1971, Washington, D. C.: ERIC Clearinghouse on Junior Colleges, April, 1972.

Altman, R. A. and P. O. Snyder. (Eds.). The Minority Student on Campus: Expectations and Possibilities. Boulder: Western Interstate Commission for Higher Education, 1971.

Bahe, V. "Reading Instruction and College Achievement," Reading Improvement, 6:57-61, 77, Winter, 1969.

Beach, L. R. Identifying the Potentially Successful among Marginal College Entrants. Final Report. Office of Education (DHEW), Washington, D. C. Bureau of Research, August, 1968.

Beasley, S. R. "The Use of Biographical Data as a Predictor of Academic Success for Minority Students at the University of Colorado," Dissertation Abstracts International, 32:6753-A, 12-A, June, 1972.

Berger, L. "University Programs for Urban Black and Puerto Rican Youth," Educational Record. 49:382-388, Fall, 1968.

Bowers, J. "The Comparison of GPA Progression Equations for Regularly Admitted and Disadvantaged Freshmen at the University of Illinois," Journal of Educational Measurement, 7:219-225, Winter, 1970.

Bowers, J. "The Evaluation of a Special Educational Opportunities Program for Disadvantaged College Students. Final Report." Illinois University, Urbana, Office of Education (DHEW), Washington, D. C.: Bureau of Research, Washington, D. C.: ERIC Clearinghouse on Higher Education, June, 1971.

Brown, J. W., M. Watson and R. Bowden. "Building Basic Skills at the Community Level: A New Approach," Journal of the Reading Specialist, 9:144-150, 158, May, 1970.

Brown, W. F., N. O. Wehe, V. G. Zunker and W. L. Haslam. "Effectiveness of Student to Student Counseling on the Academic Adjustment of Potential College Dropouts," Journal of Educational Psychology, 62: 285-287, Aug., 1971.

Bucklin, R. and M. Bucklin. "A Program to Assist Marginal College Freshmen," Journal of the National Association of Women Deans and Counselors, 34:148-150, Summer, 1971.

Bush, D. "Disadvantaged Students at College: A New Dimension," AHE College and University Bulletin, 19:2-3, March, 1967.

Cardoso, J. J. "Ghetto Blacks and College Policy," Liberal Education, 55:263-272, Oct., 1969.

- Cherdack, A. M. "The Predictive Validity of the Scholastic Aptitude Test for Disadvantaged College Students Enrolled in a Special Education Program, Final Report." Office of Education, Washington, D. C., Bureau of Research, Washington, D. C.: ERIC Clearinghouse on Higher Education, Oct., 1971.
- Churchman, A. "The Adaptation to College of High Risk and Standard Risk Students as a Function of Social Comparison Opportunities," Dissertation Abstracts International, 32:3420-3421, 6-A, Dec., 1971.
- Clark, K. B., M. Deutsch, A. Gartner, F. Keppel, H. Lewis, T. Pettigrew, L. Plotkin and F. Riessman. The Educationally Deprived. New York: Metropolitan Applied Research Center, 1972.
- Crossland, F. E. Minority Access to College, A Ford Foundation Report. New York: Schocken, 1971.
- Denmark, F. L., E. J. Shirk and V. U. Hirsch. "Determinants of Success in a College Preparatory Program for Disadvantaged High School Graduates." Paper read at Eastern Psychological Association, April, 1968, Washington.
- Dubois, R. L. "Improvement of Textbook Comprehension in College Reading Classes," Journal of Reading, 13:113-118, 165-166, Nov., 1969.
- Egerton, J. "High Risk," Southern Education Report, 3:3-14. March, 1968.
- Egerton, J. "High Risk: Five Looks," Southern Education Report, 3: 25-36, April, 1968.
- Egerton, J. "At San Mateo, Readiness Instead of Remedies," Southern Education Report, 4:20-23, Nov., 1968.
- Elkind, D. "From Ghetto School to College Campus: Some Discontinuities and Continuities," Toledo Law Review, 2 & 3:607-614, Spring-Summer, 1970.
- Foreman, F. S. "Study of Self-Reinforcement and Study Skills Program with Bright College Underachievers," Dissertation Abstracts, 30: 1430A, Oct., 1969.
- Freedman, F. B. and F. C. Myers. "The College Discovery and Development Program: Disadvantaged Youth Prepare for College," Journal of the National Association of Women Deans and Counselors, 32:90-95, Winter, 1969.
- Greising, R. A. "The High-Risk Student," North Central Association Quarterly, 43:328-334, Spring, 1969.
- Haettenschwille, D. L. "Counseling Black College Students in Special Programs." Washington, D. C.: ERIC Clearinghouse on Counseling and Personnel Services, 1970.

- Hall, J. W. "The Effects of Supportive Services for Disadvantaged College Students," Dissertation Abstracts International, 32: 3686A-3687A, 7-A, Jan., 1972.
- Hammond, L. T. and D. C. Rosick. "Problems of Prediction with College Education Achievement Project Students at Allen University." Paper presented at the Annual Meeting of the American Educational Research Association, Feb., 1971, New York.
- Hampton, W. C. "Multi-Level and Mono-Level Approaches to Study Skills with College Freshmen," Dissertation Abstracts, 30:1361, Oct., 1969.
- Harcleroad, F. F. "Disadvantaged Students: What Makes for College Survival." Paper read at American Association for Higher Education, March, 1971, Chicago.
- Harshbarger, M. "A University Reading and Study Skills Program for High-Risk Students." Paper presented at the Annual Meeting of International Reading Association, May 10-13, 1972, Detroit.
- Heath, G. L. "An Inquiry into a University's 'Noble Savage' Program," Integrated Education, 8:4-9, July-Aug., 1970.
- Heinkel, O. A. "Evaluation of a General Studies Program for the Potentially Low Academic Achiever in California Junior Colleges. Final Report." Office of Education, Washington, D. C., Bureau of Research, April, 1970, Washington, D. C.: ERIC Clearinghouse on Junior Colleges, 1970.
- Hendrix, O. R. "The Effect of Special Advising on Achievement of Freshmen with Low Predicted Grades," Personnel and Guidance Journal, 44:185-188, Oct., 1965.
- Hodges, P. F. "Prediction of College Success for Disadvantaged and Typical College Students," Dissertation Abstracts International, 32:2985-B-2986-B, 5-B, Nov., 1971
- Ikenberry, S. "Effects of Reading, Study Skills Improvement and Reduced Credit Load on Achievement and Persistence of Failure Prone College Freshmen: A Pilot Study." Office of Education, Washington, D. C., Bureau of Research, Nov., 1966, Washington, D. C.: ERIC Clearinghouse on Reading, Feb., 1969.
- Jensema, C. J. and C. E. Lunneborg. A Preliminary Investigation of a Special Education Program for Minority Group University Students. Bureau of Testing, University of Washington, June, 1970.
- Joseph, G. I. "Black Students on the Predominantly White Campus," Journal of the National Association of Women Deans and Counselors, 32:63-66 Winter, 1969.
- Kelly, R. K. "An Experimental Work-Study Program for Disadvantaged Youth," Educational Record, 49:214-220, Spring, 1968.

- Kilby, R. "Relation of a Remedial Reading Program to Scholastic Success in College," Journal of Educational Psychology, 36:513-534, Dec., 1945.
- Lahn, A. M. "Changes in Study Habits and Attitudes during a College Preparatory Program for High Risk Students." Paper presented at the American Personnel and Guidance Association National Convention, 1971, Atlantic City, N. J.
- Melnick, M. "Higher Education for the Disadvantaged: Summary Abstracts and Reviews of Research in Higher Education, Number 12." Center for the Study of Higher Education, Hofstra University, April, 1971, Washington, D. C.: ERIC Clearinghouse on Higher Education, 1971.
- Monlouis, W. D. "Higher Education Opportunities for High-Risk Disadvantaged Students: A Review of the Literature," Currents, '70, 1:14, Feb., 1970.
- Morgan, G. D. The Ghetto College Student: A Prescriptive Essay on College Youth from the Inner City. Iowa City: American College Testing Program, 1970.
- Pearce, F. C. A Study of Academic Success for College Readiness Students at the College of San Mateo. Research Report 1968-2, College of San Mateo, 1968.
- Pedrini, B. C. and D. T. Pedrini. "Reading Ability and Grades: A Brief Review." Unpublished paper, University of Nebraska at Omaha, 1972.
- Pruitt, A. S. "Black Poor at White Colleges--Personal Growth Goals," Journal of College Student Personnel, 11:3-7, Jan., 1970.
- Raymer, D. R. "A Study of Compensatory Education for 'High Risk' College Students," Dissertation Abstracts International, 31:3377, 7-A, Jan., 1971.
- Regensburg, G. "Relationship between Participation in a Reading Improvement Course and Grade Point Averages of College Freshmen," Dissertation Abstracts, 27:1559A, Dec., 1966.
- Riess, L. C. Project College Bound, A Financial Assistance Program for High School Graduates Attending the 1967 Summer Session. Pasadena City College, 1967.
- Sedlacek, W. E. and G. C. Brooks, Jr. "Black Freshmen in Large Colleges: A Survey," Personnel and Guidance Journal, 49:307-312, Dec., 1970.
- Sedlacek, W. E., G. C. Brooks, Jr. and L. A. Mindus. Black and Other Minority Admissions to Large Universities: Three Year National Trends. Research Report No. 3-72. Cultural Study Center, University of Maryland, 1972.

- Somerville, B. "Minorities and Higher Education." Paper read at Western College Association, March, 1967, San Diego.
- Somerville, B. "Can Selective Colleges Accommodate the Disadvantaged? Berkeley Says 'Yes,'" College Board Review, 65:5-10, Fall, 1967.
- "The Relationship between College Reading Laboratory Experience and Gain in College Grade Point Average," Journal of the Reading Specialist, 7:50-54, Dec., 1967.
- Thompson, W. "Experiment in Remedial Reading," School and Society, 34:156-158, Feb., 1931.
- Vermilye, D. W. (Ed.). The Extended Campus. San Francisco, Jossey-Bass, 1972.
- Williams, R. L. "What Are We Learning from Current Programs for Disadvantaged Students?" Journal of Higher Education, 40:274-285, April, 1969.
- Willingham, W. W. Admission of Minority Students in Midwestern Colleges. New York: Midwest Committee for Higher Education Survey, College Entrance Examination Board, May, 1970.
- Wilson, C. Z. "Recruitment, Academic Support, Financial Aid, and Some Interrelated Considerations." Paper read at American Personnel and Guidance Association, April, 1969, Las Vegas.
- Yuthas, L. J. "A study of Two Approaches to the Teaching of Remedial Reading to Low Achievers at an Urban College," Dissertation Abstracts, 30:2272A, Dec., 1969.
- Ziegler, J. M. "Disadvantaged Youth and the Two-Year-College." Unpublished Report, Nassau Community College, 1967, College Student Personnel Abstracts, 2:522-523, Summer, 1967.

#### IV. Tentative Conclusions

Institutions of higher education have traditionally been selective in accepting applicants for matriculation. Early in the twentieth century it was realized that many single and multiple variables could forecast student achievement, e.g., high school grades, standardized tests, ability to read, ability to study, and intelligence. However, research has tended to emphasize high school grades and achievement/apptitude test scores and has demonstrated fairly conclusively that these measures are the best predictors of college performance.

In attempting to curtail the wastage in higher education, researchers have studied college attrition. Typical investigations identified characteristics which discriminated between dropouts and persisters. College GPA was found to be a significant determinant in college attrition--students with lower GPA's were more apt to drop out. Poor academic achievement could not account for all dropouts. Consequently, the quality of academic performance with regard to persistence and attrition was studied in relation to performance in high school and on general achievement/aptitude tests. These studies reported being able to distinguish between high and low achieving students, directly, and between persisters and dropouts, indirectly. In other words, high school grades and standardized test scores can usually differentiate between persisters, transfers, dropouts, and flunkouts.

The relationship between tests, high school performances and the prediction of college achievement; and between college GPA and attrition are relatively stable for the majority of students. This is not true for culturally distinct students. The research seems to warrant considering several background and foreground factors when attempting to predict the achievement and/or attrition of these students. The factors considered in this paper include socioeconomic status, race, sex, marital status, financial aid, employment, and special programs.

College accessibility is definitely related to socioeconomic status, race, sex, and marital status--lower class, racial minority, and married women students are less apt to attend college than their respective counterparts. Financial aid and special programs are both important as means of augmenting student access to higher education, especially the disadvantaged and Blacks. Employment may be indirectly associated with

college attendance as financial assistance often stipulates work on campus and because the majority of college students are employed at some time during their undergraduate careers.

The prediction of college achievement from traditional measures is affected by several factors. Standardized tests have been acknowledged as being biased toward White, middle class persons, that is, disadvantaged and/or minority persons tend to obtain scores significantly below the mean score of the standardization population. In spite of the biases, these tests generally are able to identify student deficits and to measure adequately student ability to perform well in college when no special treatment is involved. However, the accuracy of test predictions seems to be enhanced when race and sex are considered. Socioeconomic status, financial assistance, and employment, taken independently are not as potent as sex or race in affecting the predictive validity of achievement/aptitude test scores, but the research does warrant considering these factors in various combinations. Special programs, often remedial in nature, distort predictions of participants' achievement based on test scores. Perhaps separate regression equations developed for participants in each special program are in order, but the research literature offers no specific solution at this time.

College attrition appears to be closely related to college accessibility, for example, lower class, Black, married, and women students are more apt to drop out than their respective counterparts. Financial assistance appears to impede dropping out, especially for Black and disadvantaged, and probably married, students. Since part time employment of less than sixteen hours per week does not appear to depress achievement, part time employment may be acting as a deterrent



to attrition. Special programs have been shown to be effective in reducing attrition rate of high risk disadvantaged/minority students.

In summary, the predictions of college academic achievement and attrition for the majority of students are best when based on high school grades and standardized test scores. These measures may also be used with relative accuracy for culturally distinct students when social class, race, sex, marital status, financial aid, employment and special program participation are considered.