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ABSTRACT

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MANPOWER ECONOMIC EDUCATION AND THE TRANSITION FROM SCHOOL TO WORK

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FEBRUARY 1974

Report of research carried out under a grant from the Manpower Administration, U. S. Department of Labor.

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MANPOWER ECONOMIC EDUCATION AND THE TRANSITION FROM SCHOOL TO WORK
(Impact on a Cohort of Ohio Secondary School Students)

* * *

FINAL REPORT

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17. Key Words and Document Analysis. 17a. Descriptors

Attitude survey
Attitudes
Counseling-vocational interests
Earnings
Economic analysis
Education (includes training)
Effectiveness
Employment
Female
Job Satisfaction
Labor unions
Male
Manpower
Orientation (training)
Schools
Socioeconomic status
Students
Surveys
Tests
Vocational guidance

17b. Identifiers Open-Ended Terms

Career Education
Career Planning
Economic Education
Junior High School
Longitudinal Study
Manpower Development
Manpower Economic Education
Manpower Understanding
School Dropouts
Secondary Schools
Transition from School to Work
World-of-Work Economic Education
Youth Employment

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CONTENTS

PREFACE

In a sense, the project described in this report completes the circle of a three-phased effort that began a decade ago after passage of the Manpower Development and Training Act (1962) and the Vocational Education Act of 1963. It was then, in the early Sixties, that our nation began to demonstrate serious concern over "the manpower revolution" and dedicate itself to a search for new strategies to combat unemployment, poverty and deprivation, and worker alienation.

Focussing on youth and the school curriculum (as the school-based Career Education model has done with increasing acceptance in recent years), a partnership of educators, economists, and government officials sponsored what might be called Phase I of the Manpower and Economic Education (MEE) project in the spring of 1964 -- a series of statewide conferences to heighten awareness of the fundamental changes occurring in the human resources sector of the American economy. School officials, teachers, and counselors met with representatives of industry, labor, government, and other fields to discuss challenges facing the nation's schools because of the evolving "skills" economy and other structural changes occurring in our socioeconomic life.

Following the first of these conferences (held in Columbus, Ohio, in 1964) a request came from school people for instructional materials to help classroom teachers deal with the changes, problems, and opportunities of our evolving "human resources economy." The response was the MEE curriculum development project carried out in 1966-68 at Ohio University. An experimental, one-semester course was field-tested in three Ohio school systems, with preliminary evaluation centered on junior high school students in the eighth grade.

Four and one-half years later, when the young men and women involved in the curriculum experiment were high school seniors, and again eight months following

graduation, data were gathered for the purpose of investigating what impact the course might have had on their education and employment-related behavior. This was part of Phase III, evaluation of the longer-run outcomes of the experimental course, which is the subject of the present report.

The basic purpose of this study, and indeed of the overall project, has been to learn more about factors that influence the transition from school to work in order to help young people prepare for successful participation in our nation's economic life.

Manpower Economic Education and the Transition from School to Work contains four background sections, Section 5 on world-of-work understanding, Section 6 on world-of-work attitudes, Section 7 on education-related behavior, Section 8 on employment-related behavior, our summary and conclusions, and three appendices.

Most of the statistical analysis was based on a sample of 242 subjects from a cohort of 645 male and female students who participated in the MEE curriculum experiment either as instructional or control students (matched for mental ability) during the fall semester of 1967-68 in three junior high schools in Lancaster, Ohio. Our investigations indicate that while the course had significant short-run impact on understanding and attitudes of instructional students, based on pre and post comparisons with the control group, few longer-run differences were observed between the groups during their high school years and as of a designated survey week eight months after graduation. Our study of a sample of dropouts from the cohort revealed interesting though not unexpected differences between the graduates and dropouts. The entire sample of graduates (including both instructional and control subjects) made what appears to be a remarkably smooth transition from school to work.

Surprisingly, we found no significant association between early employment success and -- IQ, academic class rank, teacher ratings of personal traits,

curriculum choice, school attendance record, career planning activities, family income, parents' education and occupation, work experience prior to graduation, enrollment in the experimental MEE course, world-of-work attitudes, and level of world-of-work knowledge. Membership in labor unions and sex are the only two factors significantly associated with wage rates and earnings for our sample. Limitations of time, staff, and budget prevented us from exploiting the research data more fully, though we are aware of numerous additional questions that might be probed and statistical techniques that could be applied. Our major findings, including observations on certain indirect effects of the course, are contained in Section 9.

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I wish to acknowledge gratefully the cooperation and support provided by Rose Wiener of the Manpower Administration, the staff of the Lancaster City Schools, and the Associate Investigators and Staff identified on the title page and in the "Administrative Notes" of this report. I particularly want to express appreciation to Naomi DiBona, whose competence, versatility, and good humor contributed so importantly to the successful completion of the project.

RLD (2/74)

SECTION I
BACKGROUND AND PURPOSES OF THE INVESTIGATION

This report describes research concerning the impact of an experimental manpower economics course on the understanding, attitudes, and behavior of a cohort of Ohio secondary school students over a period of five and one-half years (September 1967 to February 1973). The present study is part of a series of related projects initiated in May 1964 with a pilot statewide conference held in Ohio aimed at heightening awareness of the nation's manpower revolution[1/] and including the development in 1966-68 of a one-semester secondary school instructional program dealing with the world of work. The overall effort is known as the Manpower and Economic Education (MEE) Project, identified as an exemplary program in world-of-work economic education.[2/]

Significance of this research is threefold. First, it is an effort to determine whether a one-semester world-of-work course in the school curriculum produces measurable effects on behavior related to education and employment over a period of several years. Second, the investigation tests the hypothesis that young people with superior world-of-work knowledge enjoy greater employment success than those with less knowledge.[3/] And third, the project illustrates methodology, problems, and outcomes of a longitudinal study involving limited variation of the educational production function and taking into account socioeconomic background and other characteristics of students in the cohort.

1/ Attended by 134 educators and representatives of business, labor, and government, the Institute was conducted by the Ohio Council on Economic Education in cooperation with the Joint Council on Economic Education. Initiative and funding were provided by the U.S. Department of Labor, Office of Manpower, Automation, and Training. See Robert L. Darcy (editor), Proceedings of the Ohio Manpower Development Institute, May 1-2, 1964, Columbus, Ohio. Subsequent conferences were held in Iowa and Arkansas.

Footnotes 2/ and 3/ on next page.

1-1. The Problem of Youth Transition from School to Work

Persistently high unemployment rates for young workers, the erosion of positive attitudes about work among the young, and growing public concern about the efficacy of institutions affecting the transition from school to work all suggest the need for improved understanding of factors that might influence the ability of young men and women to make a successful adjustment from school to active participation in the nation's labor force.[4/]

During the Sixties, manpower programs emphasized the remedial approach to job unreadiness. In the Seventies, new attention is being focussed on preventive measures, including a comprehensive system of "career education"

2/ This program has been variously labeled "Manpower Development: Opportunities in American Economic Life" (MD/OAEL); "Manpower and Economic Education: Opportunities in American Economic Life" (MEE/OAEL); "Manpower and Economic Education" (MEE); or, among economic educators, simply "the Manpower Project." The original instructional program was developed as part of a project sponsored by the U.S. Office of Education officially entitled "An Experimental Junior High School Course in Occupational Opportunities and Labor Market Processes" (described in Section 1-2 of this report). In 1972, the U.S. Office of Education awarded a grant of $249,230 to the Joint Council on Economic Education for a 2-year national effort to disseminate existing world-of-work economic education programs. See "An Experimental Junior High School Course...," in Research Visibility Section, Exemplary Programs and Residential Schools, American Vocational Journal (October 1969) pp. 33f; "Program to Extend Manpower Project," Progress in Economic Education (September 1972); and Newsletter of the National World-of-Work Economic Education (WOWEE) Project (Fall 1972).

3/ In their study, Occupational Information and Labor Market Status: The Case of Young Men (Center for Human Resource Research, Ohio State University, 1973), Parnes and Kohen found (p. 20) that "the extent of a youth's knowledge about the world of work has an independent effect upon his wage and his occupational assignment."

4/ See "Bridging the Gap from School to Work," pp. 111-123 in 1968 Manpower Report of the President and "New Perspectives on Youth Unemployment," pp. 77-100 in 1972 Manpower Report as well as numerous other sources.

to prepare young people for productive and satisfying employment.[5] The entire congeries of organizations, practices, policies, programs, customs, and values comprising what might be termed "the institution of wage and salary employment" has come under scrutiny. Manpower specialists, educators, public officials, business and labor leaders, and others are searching for insights and a base of knowledge upon which to help construct better programs to meet the needs of employers, the economy, and most important of all, young people in their dual capacity as human resources (means of production) and human beings (ends, to be served by production).[6]

1-2. A Response to the Problem: the MEE Curriculum Experiment

One approach to analyzing the employability of youth makes use of a human capital framework. Young people who have acquired human capital in the form of knowledge and skills (including world-of-work understanding, vocational skills, and job-search skills), functional attitudes and attributes (including adaptive personality traits), good health (physical and mental), and mobility are regarded as better qualified to make the transition from school to work than those who have not.[7] Programs to smooth the transition from school

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5/ See S. P. Marland, "Career Education: Every Student Headed for a Goal," American Vocational Journal (March 1972) pp. 34ff; W. F. Pierce, "The Career Education Concept," American Education (April 1973) pp. 4-6; and Career Education Practice (ERIC Clearinghouse on Vocational and Technical Education, Ohio State University, December 1972) in which "Economic Awareness" is identified (p. 10) as one of the eight components of a school-based career education program.

6/ Changing attitudes and expectations about work are discussed in Work in America, Report of a Special Task Force to the Secretary of Health, Education, and Welfare (Cambridge: MIT Press, 1973).

7/ Parnes and Kohen, op. cit., concluded (pp. 22f) that "the correlation /found in this study/ between extent of occupational information, on the one hand, and both years of schooling and hourly wage rate on the other, suggests that at least part of the return to additional education

(Footnote 7 continued on next page)

to work may be viewed as utilizing particular investment processes to produce specific forms of human capital. The experimental MEE course, for example, was conceived as a means of utilizing a variation in school curriculum to produce human capital in the form of world-of-work knowledge and skills and perhaps also of stimulating the formation of attitudes and attributes that may prove to be functional in the world of work.

Descriptions of the experimental manpower and economic education course may be found in a number of publications including the Final Report of the MD/OAEL Project (hereafter referred to as Final Report).[8/] As indicated in the Final Report, the course was designed for boys and girls of all socioeconomic groups, including disadvantaged youth "whose knowledge of occupational opportunities and labor market processes /in the absence of formal instruction/ might otherwise be quite limited or distorted." Its purpose was to help young people prepare for "effective participation in the changing economy and world of work.../to/ bridge the gap between education and work." Content of the course was based on seven themes: (1) structure and operation of the U. S. economy; (2) economic and noneconomic functions of work; (3) nature and consequences of technological change; (4) occupational opportunities and trends; (5) labor market processes; (6) economic value of education; and (7) rational planning and decisionmaking. Emphasis was placed on the

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(Footnote 7 - continued from preceeding page)
is a reflection of education's contribution to labor market skills and know-how as distinquished from purely vocational skills and know-how." Two Colorado State University psychologists, E. R. Oetting and C. D. Miller, stress the importance of adaptive attitudes and attributes in determining job success ("The Work Adjustment Hierarchy," unpublished paper, 1973).

8/ Complete citation is provided in the Bibliography under Darcy, An Experimental Junior High School Course in Occupational Opportunities and Labor Market Processes, Final Report. Other sources describing the project are listed in the Bibliography under the same author. The summary presented here is drawn largely from Final Report, pp. i-viii and 3-12.

personal and social significance of work "in the lives of men and women" and the need for "self-examination of /the student's/ own attitudes, values, goals, and behavior relative to career planning, occupational success, economic life, social roles, individual development, and self-fulfillment." The instructional program took the form of 75 individual lessons, written by the project staff during 1967, reproduced by mimeograph, and distributed to the participating schools partly prior to and partly during the tryout semester.

Based on recommendations of guidance counselors and other consultants, and the judgment of the research and development staff, it was decided that the course should be designed for use at the 8th grade level. This was acknowledged to be a crucial period for the student's psychological development, when self-identity concepts and life aspirations were being formulated, and also a strategic time for educational planning and tentative career exploration. The instructional materials were field-tested during the Fall semester, 1967-68 at the 8th grade level in two Ohio communities (Lancaster and Zanesville)[9/] and at the 9th grade level (as a side experiment) in one junior high school in Columbus. In another side experiment, the materials were presented to 55 "potential-dropout" 10th graders in Lancaster as a two-semester course during the 1967-68 school year.

Seven of the eight instructors involved in the experiment were given special training in manpower economics during the summer of 1967 and all

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9/ The experimental course was required as an additional subject during the tryout semester for 50% of the 8th-grade class in Zanesville's three junior high schools, with instructional vs control students matched for mental ability. In Lancaster, instructional students took the one-semester MEE course in place of the first half of U.S. History while the control students (matched for mental ability) took a full year of U.S. History as the "regular" treatment.

were provided with written teaching instructions and consulting services during the tryout semester.[10/]

As recapitulated in some detail in Sections 5-1, 6-1, and 7-1 below, evaluation of the short-run impact indicated that the MEE course was successful in producing significant effects on the world-of-work understanding, attitudes, and behavior of students who were enrolled in the program.

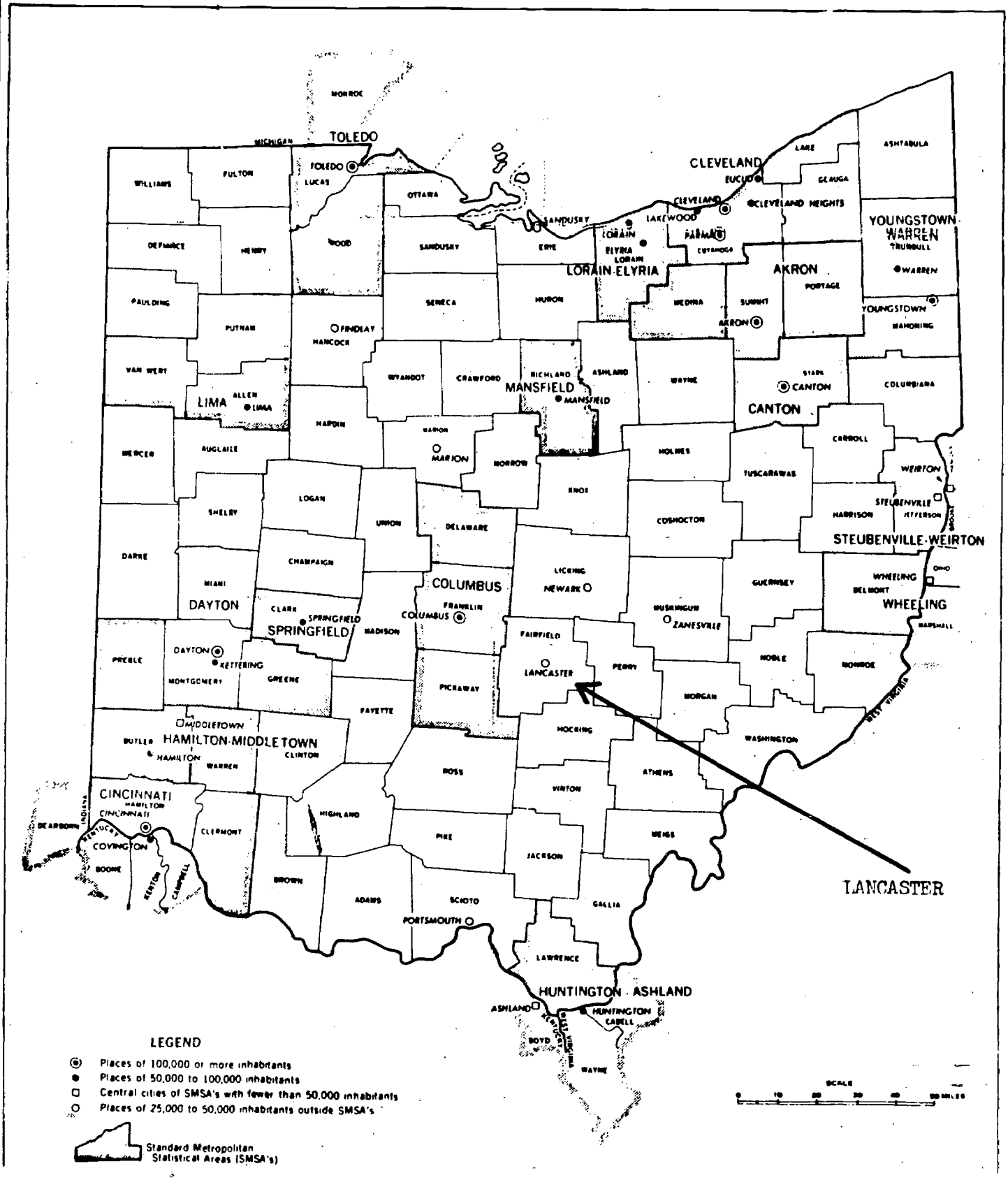
1-3. Profile of the Experimental Site: Lancaster, Ohio

It should be made clear that this study is centered on a single school system and community: Lancaster, Ohio. The subjects involved are not a random sample of young people drawn from a cross-section of American communities. As a result, whether the findings reported here are pertinent to manpower and economic education programs and the school-to-work transition elsewhere may depend partly on the extent to which the "replicative community" resembles the experimental site.

Lancaster is an urban community (although classed as nonmetropolitan by the Census Bureau) located in southcentral Ohio's Fairfield County (see map) about 25 miles from Columbus, the state capital, and adjacent to Ohio's Appalachian counties. Over the decade 1960 to 1970 Lancaster's population grew 10% to just under 33,000 people (see Table 1-3.1). This was a smaller growth rate than the national average of 13% and the 21% rate in the nearby Columbus SMSA. Family income in Lancaster (1969) was 10% below the national median.

10/ Subsequent to the experiment, the lessons were revised and assembled into a textbook or student manual published under the title Manpower and Economic Education: Opportunities in American Economic Life (New York: Joint Council on Economic Education, 1968, 316 pages) with a companion 140-page Teacher Manual. In 1973, a completely revised editlon of the book was published under the title Manpower and Economic Education: A Personal and Soclal Approach to Career Education (Denver: Love Publishing Company, 1973, 380 pages).

Counties, Standard Metropolitan Statistical Areas, and Selected Places



Source: U.S. Bureau of the Census, Census of Population - 1970, General Social and Economic Characteristics, Ohio. (Washington D.C.: U.S. Government Printing Office, 1972).

Despite the lower median income however, the incidence of poverty among Lancaster families was only 7% compared to the national average of 14%.

At the time of the 1970 Census, labor force participation rates for men and women in Lancaster were nearly identical to national rates, and the local unemployment rate of 4% was just under the 4.4% national rate. The occupational distribution of workers in Lancaster as shown in Table 1-3.1(D) was similar to that of the nation although there were relatively more blue-collar workers locally (45% versus 36% nationally). The reason for this variation can be seen in the industrial composition of the labor force. Forty-four percent of Lancaster's workers are engaged in manufacturing, compared with 24% of the total U.S. labor force. As a result of this preponderance of workers engaged in manufacturing, the percentage of workers in each of the other industrial categories in Lancaster is below the national average, but in most cases these differences are small. Less than 1% of Lancaster's population was employed in agriculture and mining.

Educationally, Lancaster's population parallels national figures. In 1970 median school years completed by persons 25 years old and over was 12.1 both locally and nationally. Somewhat more of Lancaster's population were high school graduates (55% versus 52% nationally), but relatively fewer local residents 3 to 34 years old were enrolled in school in 1970 than was the case nationally (48% versus 54%). This phenomenon is at least partially explained by differential dropout rates between Lancaster and the nation. According to the National School Public Relations Association, approximately 25% of all American high school pupils leave school before graduation.[11/] School officials

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11/ See "Dropout Dilemma Persists; Some Schools Find Solution" reprinted from "Education USA" in Education Colorado, Colorado Department of Education (September 1972).

Table 1-3.1

Socioeconomic Profile of the Experimental Site: Lancaster, Ohio

		Lancaster	United States
A.	Total Population		
	1970	32,911	203,210,158
	Percent Change, 1960-1970	10.0%	13.3%
B.	Population -- Racial Composition, 1970		
	Percent Negro and Other Races	0.7%	12.3%
C.	Income, 1969		
	Median Family Income	$8,901	$9,590
	Per Capita Income	$2,927	$3,139
	Percent of Families with Income less than Poverty Level	7.1%	13.9%
D.	Employment, 1970		
	Total Employed (16 years old and over)	13,008	78,627,000
	Labor Force Participation Rates		
	Male, 16 years old and over	80.2%	80.6%
	Female, 16 years old and over	41.9%	43.4%
	Unemployment Rate (March, 1970)	4.0%	4.4%
	Occupational Distribution (all workers 16 and over)		
	White Collar Workers	41.9%	48.2%
	Blue Collar Workers	44.6%	35.9%
	Farm Workers	0.4%	3.1%
	Service Workers	13.1%	12.8%
	Industrial Distribution (all workers 16 and over)		
	Agriculture and Mining	0.8%	4.3%
	Construction	4.0%	5.5%
	Manufacturing	44.4%	24.4%
	Transportation, Communications, Utilities and Sanitary Services	4.4%	6.3%
	Wholesale and Retail Trade	18.7%	18.9%
	Finance, Insurance, Business and Repair Services	5.6%	7.6%
	Professional and Related Services	12.8%	16.5%
	Public Administration	4.1%	5.2%
	Other Industries	5.1%	11.3%
E.	Education		
	School Enrollment (3 to 34 years old)	8,150	58,634,996
	Percent of Population 3 to 34 years old enrolled in school	47.9%	54.3%
	Persons 25 years of age and over		
	Median School Years Completed	12.1	12.1
	Percent High School Graduates	54.7%	52.3%

Sources: U.S. Census of Population, 1970. General Social and Economic Characteristics — Ohio and United States Summary.

in Lancaster estimate the rate there to be less than half the national rate.

As seen in Table 1-3.1 (B), less than one percent of Lancaster's population is nonwhite; only two of the subjects involved in the MEE experiment were black.

While in many respects Lancaster is a "representative" small American community (with the major exception of its racial composition), it is important to know how the specific sample of subjects used in the study compares with the overall community.

Table 1-3.2 shows that a relatively large number of subjects in our research sample came from higher income families. While only 13% of Lancaster families had incomes greater than $15,000 in 1969, nearly 24% of the sample was in this income category in 1971. Less than 2% of the sample were in the under-$5,000 income category compared to 17% for the community as a whole.

Table 1-3.2

Distribution of Family Income for Research Sample and Lancaster Total (Percent)

	Less than $5,000	$5,000-7,000	$7,000-10,000	$10,000-15,000	More than $15,000	All Families
Research Sample (1971)*	1.8	13.5	27.6	33.5	23.5	100%
City of Lancaster (1969)	16.7	14.2	29.0	27.4	12.7	100%

*30% of the sample did not respond to the income question.

Table 1-3.3 compares the occupational distribution of fathers of subjects in the research sample with all Lancaster males 16 years old and over. As would be expected based on the income data, fathers of the subjects in our sample are more likely to be white-collar workers than the average Lancaster male worker (48% versus 36%).

Table 1-3.3

Occupational Distribution of Male Workers: Fathers of Subjects in Research Sample and Lancaster Total (Percent)

	White-Collar Workers	Blue-Collar Workers	Farm Workers	Service Workers	All Families
Fathers of Subjects in Research Sample (1972)*	47.7	45.8	0.0	6.5	100%
City of Lancaster, Males 16 and over (1970)	36.1	55.8	0.6	7.6	100%

*12% of the sample did not respond to the question on father's occupation.

A number of factors account for the differences in economic status between the research sample and the Lancaster population taken as a whole. With regard to income, the sample and community figures are drawn from different base periods. Between 1969 (when the community income distribution was measured) and 1971 (the base year used for the sample), family income rose nationally about 9%, pushing some families out of the less than $5,000 category and pulling some into the over $15,000 range. Also relevant to income as well as occupational status is the fact that the parents of high school students are, for the most part, in their prime income earning years and thus their families would normally tend to be more highly concentrated in the upper income and higher occupational status categories. The fact that 30% of the research subjects did not respond to the family income question may also be relevant to the explanation of sample bias, with the likelihood that a large portion of the nonrespondents were from lower-income families. Moreover, it would be expected that the sample erosion in a longitudinal study would come mainly from loss of subjects of lower socioeconomic status.

1-4. Research Rationale, Expectations, and Procedures

Evaluation of the experimental MEE course in 1968 demonstrated that in the short run it had significant effects on student understanding of the world of work and a marked impact on student attitudes. Certain behavior changes were also observed. Moreover, students and school officials expressed very positive feelings about the value of the course.

The overall worth of this type of education program is to be judged partly on the basis of short-run impact and partly in terms of longer-run effects on human development and successful living -- including career competence and labor force success. Precisely what these terms mean, however, and what methods to use in measuring the degree of attainment, are extremely difficult to determine. During the 5-year period between the Fall semester of the 1967-68 school year and the survey week in February 1973, the young people studied in this investigation (i.e., the cohort enrolled as 8th graders in three Lancaster junior high schools in 1967-68) were subjected to an enormous number and variety of influences at a crucial time of human growth and change. Viewed in perspective, the magnitude of impact that a single one-semester course in world-of-work economics might have on understanding, attitudes, and behavior of the research subjects is not likely to be large.[12/] Moreover, there are statistical limitations in isolating the effects of any single

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12/ Warning that "subject matter specialists hold unrealistic expectations concerning the magnitude of change in students using project materials," one specialist in educational research points out that "the (junior high school) teacher sees the child only after he has had thirteen years of living and ...seven years of previous schooling, all of which may have taught him, perhaps indirectly, the exact opposite of what the new curriculum is trying to put across." Hulda Grobman, Evaluation Activities of Curriculum Projects, pp. 101, 103.

independent variable, such as enrollment in the experimental course. Inadequacy of measurement instruments and interdependence of factors are only two such limitations. Problems such as these are characteristic of a great deal of the research carried out in education, manpower development, and other areas involving observation and modification of human behavior.[13/]

Nevertheless, in spite of all these difficulties and limitations, it is appropriate to inquire into the longer-run consequences of a particular activity, such as an innovative program in the school curriculum, in order to seek a broader base of knowledge for making policy decisions. While some schools may feel that the short-run evaluation of MEE performed in 1968, or other methods of local appraisal, are sufficient for curriculum decisionmaking, it is at least relevant to know what, if any, longer-run effects such a course might have on such variables as individual behavior and institutional change.

The major working hypothesis to be tested in the present study may be stated as follows: "Enrollment in the experimental manpower economics (MEE) course is an important determinant of labor force status some eight months following graduation from high school."

A second hypothesis is: "Young people with superior world-of-work knowledge enjoy greater employment success early in their working lives than those with less knowledge." This hypothesis assumes greater practical importance when it is known how such knowledge can be produced, viz., by enrollment in a one-semester MEE-type course.[14/]

13/ The so-called Coleman Report (Equality of Educational Opportunity) and the Jencks study (Inequality, A Reassessment of the Effect of Family and Schooling in America) are well-known examples of methodological difficulty.

14/ This hypothesis was tested by Parnes and Kohen, op. cit., with results tending to confirm the relationship between extent of world-of-work knowledge and job success. No attempt was made in that study to determine how the knowledge was obtained.

A third hypothesis is: "Affective factors are an important dimension of early labor force success both as causal variables and as indicators of the quality of employment actually attained."

Beyond these principal hypotheses, the study illustrates methodology, problems, and outcomes associated with an experiment characterized by: (1) marginal variation in the educational production function; (2) comparison of treatment vs control subjects; and (3) analysis of a broad range of predictor and response variables over a period of several years.

Table 1-4.1 on the following page describes the analytical framework used for formulating and testing hypotheses in this study, identifies the sources of experimental data, and lists the types of statistical treatment utilized. Short-run and longer-run effects of the experimental MEE course and the influences of other factors are reported in Section 5 (Understanding), Section 6 (Attitudes), Section 7 (Behavior vis-a-vis education), and Section 8 (Behavior vis-a-vis employment).

Table 1-4.1

Influence of an Experimental Manpower Economics Course and Other Factors on the Understanding, Attitudes, and Behavior of a Cohort of Junior High School Students: an Analytical Framework

Response Variables	Data Indicators	Statistical Treatment: Descriptive	Statistical Treatment: Nonparametric tests	Statistical Treatment: Parametric tests
I. Understanding of the world of work	METU (pre (1967), post (1968)); SMETU (follow-up (1972))	Frequency distributions	chi-squares (X^2)	Sample means ($\bar{X}$); Variances (s^2); t-tests; Correlations (r); Analysis of Variance (F-tests)
II. Attitudes vis-a-vis schooling, careers, socio-economic institutions, and other topics.	SOMEA (pre, post) SOMEAX (1972) Teacher ratings for 1971-72 (from School Records) SQ (1972) LFQ/s (1973) LFQ/w (1973)			
III. Behavior vis-a-vis: A) Schooling 1) Quantity 2) Curriculum 3) GPA 4) Attendance B) Employment 1) Labor force status (incl. Armed Forces) 2) Occupation 3) Rate of pay 4) Quantity of work 5) Work satisfaction	PPIF (1967-68) SPIF (1972-73) SQ School records (1972-73) Telephone survey (1973) LFQ/s LFQ/w			

SECTION 2
RESEARCH INSTRUMENTS AND DATA STOCK

While the present investigation may properly be termed a longitudinal research study, the actual status of the MEE project--purposes, priorities, time schedules, staff, geographical considerations, funding, etc.--has varied considerably during its lifetime. Partly for that reason, different approaches have been used in gathering and processing data than would likely have resulted from a study that was pre-planned and financed as a longitudinal research effort over a comparable period of years.

2-1. Research Instruments and Data Observations

A total of 11 research instruments (tests, survey forms, questionnaires, information forms) have been used in gathering data on the cohort of Ohio students during the period 1967-1974. They are:

Manpower Economics Test of Understanding (METU)
Subset of Manpower Economics Test of Understanding (SMETU)
Survey of Manpower and Economic Attitudes (SOMEA)
Expanded Survey of Manpower and Economic Attitudes (SOMEAX)
Pupil Personnel Information Form (PPIF)
Student Questionnaire (SQ)
Student Personnel Information Form (SPIF)
Lancaster City Schools Information for SPIF (School Records)
Telephone Survey Form
Follow-up Study of Former Lancaster High School Students (LFQ/W)
Follow-up Study of the Lancaster High School Class of 1972 (LFQ/S)

A brief description of each instrument follows indicating its content and purposes; copies are included in Appendix B. Since METU, SOMEA, and PPIF were used in the original curriculum experiment, descriptions of these instruments are included in Final Report, pp. 12f.

To test hypotheses related to world-of-work understanding, each instructional and control subject took the "Manpower Economics Test of Understanding" (METU) on September 8, 1967, prior to MEE instruction; on January 17, 1968,

immediately following the course; and again on May 16, 1972, just before graduating from high school.[1/] METU is a 40-item multiple choice test examining knowledge believed by manpower specialists to be useful in planning, preparing for, and entering the world of work. Included are questions on labor force, occupational, and industrial trends; the relationships among income, education, and productivity; the social and psychological dimensions of work; and some general characteristics of the American economic system. The test is scored as the number of questions answered correctly.[2/] Except for updating certain items in 1972 (to reflect economic changes that had taken place in the four and one-half years following MEE instruction) the same instrument was used at all three points in time.[3/]

Early in 1973, we decided for a number of reasons[4/] to adapt the METU instrument to provide a narrower measure of world-of-work understanding in contrast to the relatively broad area of manpower and economic understanding for which METU was designed. Based on selections made by a panel of high school teachers, college faculty, and members of the research staff, we identified 17 items from the 40-item METU instrument that would constitute a distinct

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1/ Except those who were absent on test days and those who dropped out of the sample for one reason or another. See Section 3-1 below for a description of sample erosion.

2/ The reliability of METU is demonstrated by a Kuder-Richardson formula #20 index of .835 and a formula #21 index of .806.

3/ An example of updating is question 5, which concerns the level of per capita income. The response choices were changed because of income growth during the period between tests. See Appendix B-1.

4/ We had become aware of possible contamination of the control sample with respect to economic understanding because of student enrollment in 10th and 12th grade economics courses; we felt it would be useful to have a test that would be somewhat more comparable to the Labor Market or Occupational Information Test developed at Ohio State University's Center for Human Resource Research (see Parnes and Kohen, op. cit.); and we decided a shorter test would be advantageous if we were to administer it to other groups for purposes of comparison. Also, there were a few items we preferred to omit because of questionable validity.

instrument termed "Subset of Manpower and Economic Understanding" (SMETU). These items are:

3	4	6	10	11	13	15	16	19
24	26	27	29	32	35	36	39	

This 17-item SMETU instrument is reproduced in Appendix B-2.

To observe attitudes related to the world of work, students were asked to complete "Survey of Manpower and Economic Attitudes" (SOMEA) before and immediately after the MEE course, and "Expanded Survey of Manpower and Economic Attitudes" (SOMEAX) just before high school graduation.[5/] SOMEA was comprised of 62 attitudinal statements concerning the world of work and the institutional structure of the American economy to which the subjects responded strongly agree, agree, undecided, disagree, or strongly disagree. For the May 1972 follow-up survey, the instrument was expanded to 73 items (SOMEAX) to obtain additional observations relating to career planning, time horizons, goals, and personal sacrifice.[6/] A method of interpreting SOMEA and SOMEAX results is described in detail in Section 6 below.

During the 1967-68 school year a "Pupil Personnel Information Form" (PPIF) containing the following information was completed by an MEE teacher or guidance counselor for each student in the 8th grade:

A) Identifying Data (name, sex, address, date and place of birth, social security number, race, school) and MEE Enrollment Status (instructional or control)

B) Home and Family Background (parents' names, ages, schooling and occupations, family income, number of siblings, and living arrangements)

C) Scholastic Record (junior high and intermediate level grade point averages)

D) Test Record (mental ability, METU scores)

[5/] In all three cases, the attitude survey was administered on the day prior to administration of METU.

[6/] The 11 new items are identified by + signs; see Appendix B-4.

The PPIF is reproduced in Appendix B-5.

At the time of the May 1972 testing the subjects were asked to complete a "Student Questionnaire" (SQ) to update personal and family background information and obtain new data dealing with high school curriculum, career plans, employment experience prior to graduation, occupational aspirations, and follow-up student evaluation of the MEE course. See Appendix B-6.

School personnel in Lancaster were employed during the summer and fall of 1972 (and continuing in 1973) to report data from school records on graduation status, cumulative grade point average, class rank, teacher ratings of personal traits, scholastic awards and honors, school attendance, extra-curricular activities, mental ability and college entrance scores, summary of counseling contacts, and whether a work permit had been obtained by the subject while in high school. The form they used, "Lancaster City Schools Information for SPIF" (School Records) is reproduced in Appendix B-7.

All of the accumulated data from PPIF, SQ, and school records, along with METU scores, was edited by the research staff in Colorado and transferred to a comprehensive "Student Personnel Information Form" (SPIF). Attached in Appendix B-8, SPIF is the basic document for storing personal background and school-related data on each subject.

In order to obtain information about the activity status of members of the 1972 Lancaster High School class as of the survey week (February 5-11, 1973), and to confirm or secure mailing addresses for all subjects not in the armed forces, a telephone survey was conducted during the survey week. Callers were provided with names and 1972 addresses and phone numbers and asked to record up-to-date information on the Telephone Survey Form (B-9 in the appendix).

To obtain data concerning education-related and employment-related behavior, questionnaires (LFQ's) were mailed to all subjects contacted

by means of the telephone survey described above. Based on the information obtained in the survey, subjects who were reported to be full-time students were sent questionnaires entitled "Follow-up Study of the Lancaster High School Class of 1972" (LFQ/S), accompanied by a letter from the Superintendent of Schools (and prepaid return envelope) requesting their cooperation in returning the completed questionnaire (Appendix B-10). Subjects in the armed forces were not sent a questionnaire. All other subjects were sent a questionnaire entitled "Follow-up Study of Former Lancaster High School Students" (LFQ/W), again with a letter from the superintendent and a return envelope (Appendix B-11).

LFQ/S queried subjects concerning their current educational status as of the designated survey week (February 5-11); type of program being pursued, degree sought, expected completion date, and reasons for choosing a particular course of study. In addition, the subjects were asked if they had investigated employment prospects in their chosen field, and if so, in what ways. Subjects receiving LFQ/S were also asked to relate certain aspects of their work experience, if any, including total hours worked per week, type of job, rate of pay, etc. Finally, these subjects were asked to respond to several open-ended questions concerning the preparation they had received in high school for post-secondary training and future careers.

LFQ/W was designed to obtain the following information as of the survey week: labor force and employment status; type of job -- occupation, job title, specific duties; hours and earnings; job tenure; how job was obtained; job satisfaction; employment history -- number and types of post-high school jobs; spells and total months of unemployment; marital status; union membership; current education and training involvements; and other work related information.

Response rates were: 53% for LFQ/W (i.e., 214 questionnaires returned out of 406 subjects to whom they were mailed), and 76% for LFQ/S (i.e., 131 returned of 172 sent out).

It was originally planned that follow-up data on dropouts would be obtained during or immediately following the telephone survey conducted during the week of February 5-11, 1973. Actually, however, interviews with the dropout sample were not conducted until January 1974, with results as reported in Section 7-3 below. No formal questionnaire or research instrument was designed for this purpose.

2-2. Organization, Processing, and Storage of the Data

The names of all subjects included in the study appear on a master list which also includes the subject's identification number and indicates the data that is available for each individual.[1/] A file of individual manila folders was then made up for all subjects on the master list, labeled with the subject's name followed by a large L indicating the experimental site, Lancaster, with code letters identifying treatment classification (0=control, 1=instructional, 3=other) and junior high school attended. For subjects identified as dropouts, a green "D" is marked on the folder beside the name.

Each folder contains all of the research instruments accumulated for that subject. A complete set of data instruments (see Section 2-1 above) consists of the following items: SPIF, School Record, PPIF, SQ, METU answer sheets (1967, 68, 72), SOMEA answer sheets (1967, 68), SOMEAX (72), and LFQ. These folders are filed alphabetically by ADI, AVD, Inactive, and Dropout groups, with the ADI sample subdivided into MEE treatment groups (Instructional vs Control).[2/]

[1/] The ID number consists of five digits identifying the school system, the individual subject, and MEE treatment. E.g., the number 12470 represents a subject from the Lancaster school system (indicated by first digit, #1) whose personal identification number (second, third, fourth digits) is "247" and who was in the control group (fifth digit, 0). When the fifth digit is "1" it indicates "instructional group"; "3" indicates "other". An asterisk beside the ID number indicates the subject has been identified as a dropout (see Section 7-3). In addition to the master list -- listing in alphabetical order all subjects for whom some data are available with additional alphabetical lists by MEE treatment -- there is also a card file arranged by MEE treatment and amount of data available. The card file facilitates re-grouping of sample subsets for various purposes.

[2/] For explanation of ADI, AVD, and other groups see Section 3-1 below.

Subjects for whom all data instruments were available (though not necessarily with every bit of information included) were designated the ADI group. Because the greatest amount of information was available for these subjects, this group was chosen to serve as the basic sample in the present (TSW) investigation.

Preparation of the data for processing consisted of final editing, assignment of numerical codes for categorical variables, and transfer of the data to Fortran Coding Forms for keypunching. Most of the data that can be coded are now contained on Hollerith cards.

Processing of the data stock began with the cross-tabulation (including chi-square tests of independence) of most variables by MEE treatment. After the distributions and statistical data were printed out by the computer, row percentages were calculated enabling us to interpret the data. In several cases correlation coefficients were calculated and t-tests conducted on portions of the data. Complex statistical analysis has not been performed owing to the dearth of significant differences between the treatment groups as revealed in the simple univariate analyses.

Most of the data description and statistical analysis were done using the CDC 6400 computer. A Hewlett-Packard 9810A desk-type computer and standard electronic desk calculators were also used.

2-3. Inventory of Data Stock

As indicated earlier, data used in this study were accumulated over a period of more than six years (September 1967 to January 1974) and were gathered in conjunction with projects sponsored by a number of organizations.[1/] By

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[1/] In addition to the Department of Labor, these include the U.S. Office of Education, Ohio University, Colorado State University, and Martha Holden Jennings Foundation, Cleveland, Ohio. Cooperation and assistance in gathering the data were provided by the Lancaster City Schools, Zanesville City Schools, and Muskingum Area Vocational School, Zanesville -- all in Ohio.

the time the present project was completed, the following data existed:

1) File folders on 764 subjects from Lancaster

2) File folders on 612 subjects from Zanesville[2/]

3) IBM scan sheets (#509) containing METU, SOMEAX, and SQ responses of 300 subjects from Muskingum Area Vocational School [3/]

4) Hollerith cards (≈6,000) for various samples of Lancaster subjects

   a) METU and SMETU (observations in 1967, 1968, 1972)

   b) SOMEA (observations in 1967, 1968, 1972)

   c) SOMEAX (1972 observations)

   d) SPIF (selected items, graduates)

   e) SPIF (dropouts, limited data obtained in January 1974)

   f) LFQ/W (selected items, graduates)

   g) LFQ/S (selected items, graduates)

5) Hollerith cards (METU & SOMEAX) for Zanesville subjects

6) Computer printouts (one complete file drawer) for various samples of Lancaster subjects. [4/]

7) Computer printouts (METU & SOMEAX) for Zanesville subjects.

None of the research data have yet been put on magnetic tape.

[2/] Incomplete data; not used in present study.

[3/] Obtained in May 1972; not used in present study.

[4/] Since the computer printouts are coded by numbers or abbreviations, we identify the variables and the responses by xeroxing the code sheets, cutting and pasting the question and corresponding responses onto the printout and adding row percentages for each table. An inventory of the tables was made indicating uses of the data.

SECTION 3
POPULATION, SAMPLES, AND EXPERIMENTAL CONTROLS

The population from which our original sample was drawn consisted of 645 male and female students enrolled in the eighth grade at the three public junior high schools in Lancaster, Ohio, during the fall semester of the 1967-68 school year.[1/]

3-1. Erosion of the Sample

As is true with any longitudinal study, sample size erodes with the passage of time. METU scores were reported for 634 students (instructional + control) at the beginning of the fall semester 1967-68. The number of post-test observations at the end of the semester was 599; and not all of those students had taken both pre and post tests. Between January 1968 and May 1972, 193 students (transfers, early graduates, deceased, and 72 dropouts)[2/] left the Lancaster schools and more than 100 entered the system. The 1971-72 senior class list for Lancaster High School (LHS) contained the names of 578 students, 558 of whom actually graduated in June 1972. The number of students for whom METU scores were obtained in May 1972 was exactly 500 -- 416 of whom had been involved in the 1967-68 experiment either as experimental or control subjects, while 84 had not (i.e., they had entered the Lancaster schools sometime after January 1968). Similar numbers of observations (≈500) were made with the other research instruments (SOMEA, PPIF, SQ) over this 56-month period (September 1967 - May 1972) and by examining school records -- to provide data for SPIF during the summer of 1972.

[1/] As indicated in Section I, Lancaster is an urban community of 33,000 people located in nonmetropolitan Fairfield County 25 miles southeast of Columbus. In 1970 blue-collar employment exceeded white-collar by a small margin, median family income (1969) was 10% below the national average, the incidence of income poverty was substantially below the national rate, and less than 1% of Lancaster's population was black.

[2/] There were also some late graduates and students that were unaccounted for.

Having 500 METU (pre) scores, 500 METU (post) scores, and 500 METU (1972 follow-up) scores, however, does not mean we had obtained observations at all three points for the same 500 subjects. Absences on test days and other factors resulted in variation in the composition of the "500" -- leaving us with an "all-METU-scores" sample smaller than that number.

By the time we had conducted the Telephone Survey (February 1973) and received mail responses to the two different forms of the Labor Force Questionnaire (LFQ/S and LFQ/W) by the summer of 1973, we naturally had gaps in the data files for many of the subjects. Over a six-year period, we made 11 distinct observations as follows:

METU (pre-test, September 1967)
METU (post-test, January 1968)
METU (follow-up test, May 1972)
SOMEA (pre-test, September 1967)
SOMEA (post-test, January 1968)
SOMEAX (follow-up test, May 1972)
PPIF (Fall semester, 1967-68)
SQ (May 1972)
SPIF/School Records (Summer 1972)
Telephone Survey (February 1973)
LFQ (Spring-Summer 1973)

In July 1973, we froze the data stock and proceeded to organize the data and define various population samples for use in the final statistical testing and analysis. These are described below.

Aggregate Adjusted Sample (AGA; n=771) is comprised of the 771 subjects who were "potentially involved" in the study in the sense that they were either (a) enrolled as 8th-grade students in Lancaster in the fall semester 1967-68 or (b) were members of the 1971-72 LHS senior class, or (c) both. (Another way of defining the 771 is by summing the 578 students on the senior class list and 193 in the attrition sample.) As explained in footnote 3 below, it turned out that we were not able to utilize data gathered from students in category (b) in the present study.

Attrition Sample (ATR, n=193) consists of the 193 subjects in the original cohort who were not members of the 1971-72 LHS senior class. Subsets of this group include:

ATR-a) students who transferred out of the Lancaster school system (n=91)

ATR-b) students individually identified by school staff as dropouts (n=72): includes 32 instructional, 36 control, and 4 treatment status unknown

ATR-c) early or late graduates: excluded from the senior class list (n=24)

ATR-d) deceased or unknown (n=6)

Available Data Sample (AVD, n varies) includes instructional and control subjects for whom data pertinent to a particular statistical test are available (e.g., METU 1972 follow-up score or SOMEA instructional group 1968 post-test results or completed 1973 LFQ/W's and LFQ/S's). The composition of this group changes from test to test. In general this sample will include the ADI group (see below) plus some of the instructional and/or control subjects[3/] from each of the following groups:

NLFQ (n=34), subjects for whom all data are available except LFQ: includes 16 instructional and 18 control students;

INC (n=282), subjects whose files are incomplete, lacking one or more of the 1967, 1968, 1972, or 1973 data instruments: includes 130 instructional and 152 control students;

INA (n=69), subjects who moved away from Lancaster and for whom only limited data are available: the inactive group.

The AVD group is used in order to obtain a larger sample size for testing relationships among particular variables than is provided by the ADI sample.

3/ Our AVD sample does not include subjects designated "Other" (Group 3), i.e., 112 students in the 1971-72 LHS senior class for whom we have some 1972 and/or 1973 data but no 1967-68 data since they were not enrolled in a junior high school in Lancaster at the time of the curriculum experiment fall semester 1967-68. Limitations of time, staff, and budget prohibited us from analyzing any of the Group 3 data in this study.

All Data Instrument Sample (ADI, n=242) is comprised of the 134 instructional and 108 control subjects for whom we have all data instruments (i.e., each folder contains documents recording all 11 distinct observations made over a period of nearly six years, though this does not mean that all items of information are necessarily included on each and every instrument or questionnaire in the ADI file). This basically is the research sample used throughout the present (Transition from School to Work, TSW) study.

In summary, as Table 3-1.1 shows, from a beginning population of 645 in September 1967, we found ourselves in September 1973 (when our final statistical analysis was commenced) with a sample of 242 subjects (the ADI sample) for whom we had complete data files. In addition, we had larger samples for particular observations (the AVD sample). And we had some data from 112 subjects (Group 3) who had joined the high school class of our original cohort, though circumstances prevented us from using the data in our present study.

Table 3-1.1

Summary of Population and Samples Used in TSW Study

	No. of Subjects	Sample as % of Population
Population (Fall 1968-68 enrollment of 8th graders)	645	
Original Sample (No. of METU observations, 9/67)	634	98.3%
Instructional	(324)	
Control	(310)	
Post-treatment Sample (No. of METU observations, 1/68)	599	92.9%
Instructional	(306)	
Control	(293)	
Follow-up Sample (No. of METU observations, 5/72)	500	
Instructional	(209)	416 64.5%
Control	(207)	
Others	(84)	
Attrition Sample		
Transfer-outs	(91)	
Dropouts	(72)	13.7%*
Others	(30)	
All-Data-Instrument Sample (9/73)	242	37.5%
Instructional	(134)	
Control	(108)	

*"Internal dropout rate" as explained in Section 7-3.

3-2. Experimental Controls

As explained in Section I above, students included in the 1967-68 curriculum experiment were randomly assigned to instructional or control groups on the basis of scores made on the Otis Test of Mental Ability (Beta Form). No attempt was made to stratify the sample on the basis of sex, socioeconomic status, or other factors.

Because of shrinkage in the sample size, we performed t-tests to determine whether the ADI and AVD samples used in the present investigation were still matched on the basis of mental ability. Comparing IQ scores, we found (see Table 3-2.1) no significant difference between the instructional vs control groups. Similarly, there was no significant difference between I vs C groups in the AVD sample, as shown in Table 3-2.2. As a further cross-check, we compared 1967 pre-METU and pre-SMETU scores of instructional vs control groups for the ADI sample (see Tables 5-2.1 and 5-2.2) and found no significant difference -- suggesting that the two groups indeed were evenly matched in mental ability at the outset of the experiment.

Table 3-2.1

Comparison of IQ Scores for Instructional vs Control Subjects (ADI)

Instructional	Control	
$\bar{X}$ = 106.94 S_x = 13.82 n = 134	$\bar{X}$ = 105.56 S_x = 12.25 n = 108	$\bar{X}_1 - \bar{X}_C$ = 1.38 t = 0.809 significant only at $p \geq .418$

Table 3-2.2

Comparison of IQ Scores for Instructional vs Control Subjects (AVD)

Instructional	Control	
$\bar{X}$ = 101.27 S_x = 16.54 n = 321	$\bar{X}$ = 101.74 S_x = 15.14 n = 274	$\bar{X}_1 - \bar{X}_C$ = .47 t = 0.359 significant only at $p \geq .9188$

3-3. Contamination of the Control Sample

In order to assure the integrity of the control group for possible future comparisons, the school system agreed in 1967 not to enroll the control students in an MEE course subsequent to the experimental semester. Preservation of an "uncontaminated" sample of in-school students over a period of four and one-half years (between participation as control subjects in the 8th grade and graduation from high school) was expected to be difficult, if not impossible.

Despite early indications that the control group had remained relatively free of contaminating curricular influences, it was eventually learned that a significant amount of instruction in economics and manpower (or world-of-work) was indeed given to students in the control group. In response to a formal request for details on the extent of such classroom exposure, a member of the school staff submitted a report in the summer of 1973 listing the following courses with economic and manpower content which had been taught in the Lancaster schools between 1968 and 1972:

1) 9th grade, Introduction to Business (elective)
2) 10th grade, Economics (elective)
3) 10th-12th grade, Current Affairs (elective)
4) 11th grade, U.S. History (required)
5) 11th-12th grade, Consumer Math (elective)
6) 12th grade, Economics (required)

The first five courses provided one credit; the sixth carried one-half credit.

Perusal of the report suggests that some contamination resulted directly from the required 12th grade economics course[4/] and the required 11th grade U.S.

4/ On the May 1972 SQ's, 100% of the ADI sample -- instructional and control -- reported that they had taken an economics course either in 10th grade or 12th grade.

history course, which included "exploration of the world of work." While it appears that none of the MEE instructional units or lessons were specifically used in these courses, nevertheless two of the Lancaster High School (LHS) teachers involved in the listed courses had been on junior high faculties at the time of the 1967-68 MEE project and were actively involved in the teaching experiment. Moreover, a number of in-service teacher education programs in economics were conducted between 1967 and 1972, providing frequent opportunities for junior and senior high social studies teachers to exchange classroom experiences, curriculum materials, notes, and ideas about teaching economics, history, and world-of-work themes.[5/]

Based on the report and discussions with school personnel, we conclude that significant contamination of the control group did occur.

5/ The report stated that, beginning with the 1968-69 school year, 10 lessons from the experimental MEE course (about 15% of the total course) were included in all sections of 8th grade U.S. History. Since our control students by that time were in the 9th grade, there was no direct contamination from that source.

SECTION 4
ADJUSTMENT FOR SOCIOECONOMIC BACKGROUND AND OTHER VARIABLES

Numerous research studies have indicated that family background, socioeconomic status, and certain demographic characteristics exert some influence on educational achievement, attitudes, and economic behavior.[1/] Mindful of these results, we recognize the need to statistically control for these characteristics in order to make valid inferences concerning the independent effects of the MEE course on world-of-work understanding, attitudes, and behavior.

4-1. Mental Ability Matching and Other Characteristics

The instructional and control groups established for the experiment were matched in 1967 on the basis of mental ability. Statistical tests performed in 1973 indicated no significant differences in IQ between groups in the ADI sample, which is used in this investigation. With respect to intelligence, the instructional and control groups are well matched, and thus there is no need to statistically control for this factor.[2/]

Fortuitously, the groups are also well matched by sex. In the ADI sample both groups have identical sex distributions: 51% female, 49% male. Only one subject in the entire ADI sample is nonwhite. The instructional and control groups are quite similar in terms of father's 1972 occupation (classified by seven major nonagricultural occupational groups). There was no significant difference between the mother's education for the instructional or control subjects of the ADI group. However, the fathers of the ADI instructional group tended to have a higher educational level with 78% possessing a high school education and/or some college compared with 67% of the control fathers.

1/ See James S. Coleman, et al., Equality of Educational Opportunity; George Mayeske, et al., A Study of the Achievement of Our Nation's Students; George Mayeske, et al., A Study of Our Nation's Schools; and Christopher Jencks, Inequality: A Reassessment of the Effect of Family and Schooling in America.

2/ See Section 3-2 above. IQ's of the dropout sample as well as the ADI group are reported in Appendix A-1.

4-2. Differences in Family Income

As is indicated in Table 4-2.1 and the resulting X^2 test of independence, the subjects' family incomes in 1966 were not independent of enrollment in the MEE course.

Table 4-2.1

Distribution of Instructional and Control Groups (ADI) by 1966 Family Income

	Under $4000		$4000-6000		$6000-10000		Over $10000		Total		No Response*	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
instructional	5	4	29	22	60	46	37	28	134	100	3	--
Control	3	3	44	41	40	47	20	19	108	100	1	--

(Each entry is number of families in each category)

H_o: Level of family income in 1966 is not associated with enrollment in MEE course.

$X^2 = 10.337$ Reject H_o at $p \geq 0.0159$

$df = 3$

* The "No Response" category is consistently excluded from the base in calculating percentage distributions of responses throughout the report.

It appears that the family incomes of subjects who took the course were generally higher in 1966 than the family incomes of the control students. The table shows that 74% of the instructional group had incomes of $6000 and above, compared to 56% of the control group.[3/]

Therefore, knowing if a subject took the experimental MEE course would tend to characterize the level of his family's income in 1966, and -- to the extent that higher family income is positively associated with academic achievement, attitudes about the social environment, and labor force success -- results of

3/ Family incomes of instructional and control groups were more similar in 1971, with 55% of the instructional students reporting family incomes above $10,000 compared with 59% of the control students. Rejection of the null hypothesis was possible only at a probability level of p = .148.

statistical tests comparing instructional vs control students would be subject to adjustment in making interpretations.

4-3. Differences in School Environment

Another interesting and potentially important difference between the instructional and control groups concerns which of the three Lancaster junior high schools the subjects attended. In addition to personal background characteristics of the students, the impact of any instructional program depends on teacher input and other factors associated with differing school environments. Reexamination of results obtained in the original experiment showed that, at least with regard to METU scores, a great deal of variation existed among the junior high schools in the short term effects of MEE.[4/] Table 4-3.1 below strongly indicates, and the X^2 statistic confirms, that the distribution of instructional and control subjects in the ADI sample is not the same among schools.

Table 4-3.1

Distribution of Instructional and Control Groups (ADI) by Junior High School

	General Sherman		Ewing		Stanbery		Total	
	No.	%	No.	%	No.	%	No.	%
Instructional	33	25	49	37	52	39	134	100
Control	50	45	31	28	27	25	108	100

H_o: Inclusion in the Instructional sample is not associated with particular junior high school attended.

$X^2 = 11.038$ Reject H_o at $p \geq 0.004$

$df = 2$

4/ See Appendix A-3(b) for SMETU scores (pre, post, follow-up) by junior high school attended. METU scores by schools appear in Final Report, p. 17.

Of great interest at this point is the observation that the instructional group is underrepresented from the junior high school in which the most notable gain in METU scores was experienced, viz., General Sherman, which recorded a pre to post gain of 76.2% compared with gains of less than 40% for each of the other two schools. One likely effect of this underrepresentation is to lower the 1972 follow-up METU scores made by instructional students in the ADI sample, thereby reducing the mean score advantage of the instructional group over the control group.[5/]

4-4. Statistical Control Methods

Appendix A-2 (Technical Notes) describes methods that were considered for use in order to statistically control for background differences between the instructional and control groups. As the study progressed, it became clear that differences in response variables relating to attitudes and behavior were quite small. Therefore, because of time and resource constraints as well as limited necessity, plans to perform the statistical controls were abandoned.

5/ This imbalance among schools/groups also helps to explain why family incomes were higher for ADI instructional students compared with control. According to Lancaster school officials, socioeconomic status of students at Sherman and Stanbery is markedly lower than Ewing. Thus, high-income Ewing is over-represented in the ADI instructional sample compared with lower-income Sherman.

SECTION 5
MEASURED IMPACT OF THE EXPERIMENTAL COURSE ON WORLD-OF-WORK UNDERSTANDING

In this section we compare the world-of-work understanding of instructional and control groups at three different points in time based on scores made on the 40-item "Manpower Economics Test of Understanding" (METU) and on the shorter version of that instrument, "Subset of Manpower Economics Test of Understanding" (SMETU). The latter test is comprised of 17 items focusing on occupational information, labor force trends, and world-of-work rather than broader economic topics.

5-1. Recapitulation of Short-run Impact

As reported in the 1968 Final Report on the MD/OAEL Project, the 300 instructional students in Lancaster's three junior high schools (LJH) increased their mean score on METU from 15.2 to 22.3 (a gain of 46.7% using the pre-test mean as a base) during the semester they were enrolled in the experimental course. Meanwhile the 300 LJH control students recorded a 6.0% gain from 14.9 to 15.8 during the same period. Based on these findings (and related statistical tests), we concluded that the course had a highly significant impact on world-of-work understanding in the short run.[1/]

Our recent calculations of METU and SMETU scores for the smaller ADI sample yielded results that were very similar to the gain scores reported above for the original sample. The METU mean for the instructional group rose 41% from 16.3 (pre-test) to 23.0 (post-test) while the control group increased 9.9% from 15.5 in September 1967 to 17.0 in January 1968. Measuring with the SMETU instrument, the ADI sample revealed a gain of 37.2% for the instructional students (from $\bar{X}$=7.67 to $\bar{X}$=10.52) and an increase of 5.8% for control students

1/ Final Report, pp. 17f, 22.

(from $\bar{X}$=7.27 to $\bar{X}$=7.69). Again, this indicated substantial impact of the course on understanding.

5-2. Longer-run Impact

Given the fact that the experimental course had a highly significant impact on world-of-work understanding in the short run, how much of this understanding was retained over the next four and one-half years, and how much (if any) advantage did the instructional group retain vis-a-vis the control group over this period of time? Table 5-2.1 summarizes mean scores and changes over the period 1967-1972 for instructional and control students based on the 40-item METU instrument, while Table 5-2.2 reports similar data based on the 17-item SMETU instrument. (See Appendix A-3 for detail by sex and school.)

Between January 1968 and May 1972, the mean METU score for the instructional group (ADI) increased slightly, 23.03 to 23.54, but the difference was not statistically significant. (SMETU mean score remained constant.) During this same period, the mean METU score for control students showed a highly significant gain from 17.0 to 22.3. (Mean SMETU for control subjects also rose significantly, from 7.7 to 9.7). By May 1972, the 1.3-point METU advantage maintained by the instructional group was significant only at the .10 level; and the 0.7-point SMETU advantage was significant at the .06 level. However, these p values are somewhat misleading when one observes that a substantial amount of the 1972 difference between the two groups actually existed at the start, with the 1967 pre-test means. This leads to the conclusion that no real difference existed in METU and SMETU mean scores of instructional vs control groups in 1972. (Differences in gain scores, I vs C between 1967 and 1972 were small, amounting to an instructional group advantage of less than half a point on each instrument.)

Thus, the instructional students basically retained the world-of-work knowledge they acquired from the experimental course; but the advantage the

Table 5-2.1

Mean Scores on METU, Instructional and Control Groups (ADI) in 1967, 1968, and 1972*

OBSERVATION	1967	1968	1972
Instructional n=134	$\bar{X} = 16.28$ $S_x = 5.01$	$\bar{X} = 23.03$ $S_x = 6.45$	$\bar{X} = 23.54$ $S_x = 6.28$
Control n=108	$\bar{X} = 15.47$ $S_x = 4.74$	$\bar{X} = 17.00$ $S_x = 4.31$	$\bar{X} = 22.27$ $S_x = 5.76$
Instructional vs Control	$\bar{X}_I - \bar{X}_C = 0.81$ $t = 1.288$ Significant at $p = .197$	$\bar{X}_I - \bar{X}_C = 6.03$ $t = 8.681$ Significant at $p < .001$	$\bar{X}_I - \bar{X}_C = 1.27$ $t = 1.638$ Significant at $p = .101$

Changes in Instructional Group	Changes in Control Group
$\bar{X}_{1968} - \bar{X}_{1967} = 6.75$ $t = 9.568$ Significant at $p < .001$	$\bar{X}_{1968} - \bar{X}_{1967} = 1.53$ $t = 2.482$ Significant at $p = .013$
$\bar{X}_{1972} - \bar{X}_{1968} = 0.51$ $t = 0.656$ Significant at $p = .509$	$\bar{X}_{1972} - \bar{X}_{1968} = 5.27$ $t = 7.613$ Significant at $p < .001$
$\bar{X}_{1972} - \bar{X}_{1967} = 7.26$ $t = 10.463$ Significant at $p < .001$	$\bar{X}_{1972} - \bar{X}_{1967} = 6.80$ $t = 9.475$ Significant at $p < .001$

* The METU instrument is described in Section 2 above.

Table 5-2.2

Mean Scores on SMETU, Instructional and Control Groups (ADI) in 1967, 1968, and 1972*

OBSERVATION	1967	1968	1972
Instructional n=134	$\bar{X}$ = 7.67 S_x = 2.66	$\bar{X}$ = 10.52 S_x = 3.13	$\bar{X}$ = 10.40 S_x = 2.90
Control n=108	$\bar{X}$ = 7.27 S_x = 2.41	$\bar{X}$ = 7.69 S_x = 2.41	$\bar{X}$ = 9.73 S_x = 2.63
Instructional vs Control	$\bar{X}_I - \bar{X}_C$ = 0.40 t = 1.226 Significant at p=.219	$\bar{X}_I - \bar{X}_C$ = 2.83 Significant at p<.001	$\bar{X}_I - \bar{X}_C$ = 0.67 Significant at p=.060

Changes in Instructional Group	Changes in Control Group
$\bar{X}_{1968} - \bar{X}_{1967}$ = 2.85 t = 8.033 Significant at p < .001	$\bar{X}_{1968} - \bar{X}_{1967}$ = 0.42 t = 1.281 Significant at p = .201
$\bar{X}_{1972} - \bar{X}_{1968}$ = -0.12 t = 0.326 Significant at p = .741	$\bar{X}_{1972} - \bar{X}_{1968}$ = 2.04 t = 5.944 Significant at p < .001
$\bar{X}_{1972} - \bar{X}_{1967}$ = 2.73 t = 8.029 Significant at p < .001	$\bar{X}_{1972} - \bar{X}_{1967}$ = 2.46 t = 7.168 Significant at p < .001

* The SMETU instrument is described in Section 2 above.

instructional group held over the control group at the end of the MEE course had nearly disappeared by May 1972, four and one-half years later.

The fact that the world-of-work understanding of instructional students was at virtually the same level in 1972 as in 1968 (after having increased sharply during the fall semester 1967-68) suggests that not much additional world-of-work information is "picked up" from random sources and experiences simply as one grows from age 13½ to 18. On the other hand, the narrowing of the gap in world-of-work knowledge possessed by instructional vs control students over the four and one-half year period suggests that some such knowledge (perhaps a basic core) can be acquired from sources other than a special course in the school curriculum -- as evidenced by the control group gaining 6.8 points on the METU and 2.5 points on the SMETU between 1967 and 1972. These alternative sources include: vocational counseling, courses that touch on world-of-work topics (e.g., Economics, U. S. History),[2/] work experience, parental influence, interaction with peer group (some of whom may have taken a special world-of-work course), TV and other mass media, and others.

It is not known <u>when</u> the significant differences between the instructional and control groups ceased to exist or what the pattern of retention and/or re-learning might have been for the instructional group, but it is likely that the difference persisted over a certain period of time. It is also possible that the differential understanding may have exerted important influences on the educational development of instructional subjects during their school years -- in ways that defy statistical measurement. What appears clear is that the educational value of all these random sources combined, over a period of nearly five years, is no more than the rough equivalent of

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2/ See Section 3-3 above.

a one-semester junior high school course that meets five days a week for 40 minutes per session.

5-3. METU and SMETU Item Analysis, 1972 Follow-up Test

Raw scores recorded for the 1972 follow-up METU averaged about 23 for the total ADI sample.[3/] This means that the typical subject answered correctly less than 60% of the 40 items included on the METU instrument. Likewise for the METU 17-item subset, less than 60% of the items were answered correctly on the average. It is interesting to examine results of METU item by item to see in what specific areas manpower and economic misunderstandings exist and to compare the responses of instructional and control students. Table 5-3.1 reports the distribution of responses for each of the 40 METU questions by instructional and control groups. The 17 items that are circled in the table are the subset of questions comprising the SMETU instrument.

Questions missed more than 50% of the time by both instructional and control groups included the following: 4*, 5, 7, 11*, 14, 17, 18, 19*, 22, 24*, 28, 29*, 31, 34, and 40. Six other questions -- 6*, 12, 23, 36*, 37, and 38 -- were missed less frequently but exhibited noteworthy differences between the two groups.[4/] Since world-of-work understanding tested by the SMETU subset is the most relevant in the context of this report, most of the discussion below will be confined to these items.

Most frequently missed among the SMETU items (more than 80% of the time) was question 11 which asked the subjects to choose from among four industry groups the one expected to provide the greatest increase in employment over the

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[3/] The instructional group scored 23.54 compared with 22.27 for the control students; see Table 5-2.1 above.

[4/] Items marked with an asterisk are part of the SMETU subset.

Table 5-3.1

Item Analysis of METU and SMETU, 1972 Follow-up Tests, by Instructional vs Control (ADI) 1/

1. The main effect of technological change and automation since World War II has been to:
   1. double the average rate of unemployment.
   2. increase production costs per unit of output.
   *3. raise the productivity of workers.
   4. reduce the total earnings of workers.

Answer / Group	1		2		3*		4		NO RESPONSE	
	number	percent	number	percent	number	percent	number	percent	number	percent
Instructional	12	9	36	27	84	63	2	1	-	
Control	13	12	30	28	63	58	2	2	-	

2. The number of workers in the civilian labor force in the United States is about:
   1. 85 thousand.
   2. 850 thousand.
   *3. 85 million.
   4. 1.2 billion.

Answer / Group	1		2		3*		4		NO RESPONSE	
	number	percent	number	percent	number	percent	number	percent	number	percent
Instructional	8	6	18	13	73	54	35	26	-	
Control	11	10	23	21	55	51	19	18	-	

1/ For description of the instruments, see Section 2-1 above. Asterisk indicates correct answer. Circled items constitute SMETU.
In computing percentage distribution of responses, "No Response" category is omitted from the base.

(3.) Studies by sociologists show that in the United States a person's social status is:
1. entirely unrelated to his job.
*2. very closely related to his job.
3. related to his job only in small towns.
4. related to his job only in large cities.

Answer / Group	1		2*		3		4		NO RESPONSE	
	number	percent	number	percent	number	percent	number	percent	number	percent
Instructional	7	5	110	82	12	9	5	4	-	
Control	8	7	88	81	7	6	5	5	-	

(4.) Occupational skills that are likely to be most useful and valuable to a worker (over the next 20 or 30 years) are:
1. skills that are highly specialized to a particular job.
*2. general communications skills such as reading, writing, and working with other people, that can be transferred to different kinds of jobs.
3. such practical skills as knowing how to operate a drill press or lathe or a hair-drying machine in a beauty shop.
4. skills in using standard calculating equipment to solve routine problems in business finance.

Answer / Group	1		2*		3		4		NO RESPONSE	
	number	percent	number	percent	number	percent	number	percent	number	percent
Instructional	71	53	39	29	5	4	19	14	-	
Control	60	56	27	25	8	7	12	11	1	

5. Income per person in Ohio (if we divided the total income received by all persons in Ohio by the total number of men, women, and children who live in the state) currently is about:
1. $500 per year.
2. $1500 per year.
*3. $3500 per year.
4. $6000 per year.

Answer / Group	1		2		3*		4		NO RESPONSE	
	number	percent	number	percent	number	percent	number	percent	number	percent
Instructional	8	6	47	35	46	34	33	25	-	
Control	7	6	29	27	41	38	31	29	-	

⑥ Which of the following jobs is usually performed by a technician?
1. Doing original research in nuclear physics at a university laboratory.
2. Tightening bolts on an automobile as it moves down the assembly line.
3. Correcting a worker who has made errors on his production line job.
*4. Checking blood specimens in a hospital for signs of disease.

Answer / Group	1		2		3		4*		NO RESPONSE	
	number	percent	number	percent	number	percent	number	percent	number	percent
Instructional	35	26	8	6	4	3	87	65	-	
Control	41	38	8	7	7	6	52	48	-	

7. The maximum amount of goods and services that a nation can produce in any one year is set by:
1. its total supply of natural resources, including land and mineral deposits.
2. the amount of money people have to spend.
3. regulations and controls determined by the government.
*4. the level of technology and the quantity and quality of manpower and nonhuman resources available.

Answer / Group	1		2		3		4*		NO RESPONSE	
	number	percent	number	percent	number	percent	number	percent	number	percent
Instructional	27	20	19	14	17	13	71	53	-	
Control	20	19	15	14	24	22	49	45	-	

8. In general, what is the effect of more years of schooling on the lifetime earnings that an individual can expect?
1. Earnings will be much lower because of income not earned while still in school.
2. Total earnings will be about the same, regardless of how much schooling a person has.
*3. Earnings will be higher for people with more schooling.
4. Total lifetime earnings will be somewhat higher for people who to directly to work when they reach age 16 than for those who spend one or two years in college.

Answer / Group	1		2		3*		4		NO RESPONSE	
	number	percent	number	percent	number	percent	number	percent	number	percent
Instructional	4	3	11	8	113	84	6	4	-	
Control	6	6	10	9	88	81	4	4	-	

9. In a basically private-enterprise market economy, such as the U.S. economic system, who generally has the most influence in determining what goods and services will be produced?
   *1. Consumers.
   2. Federal government officials.
   3. The Chamber of Commerce.
   4. Labor unions.

Answer / Group	1*		2		3		4		NO RESPONSE	
	number	percent	number	percent	number	percent	number	percent	number	percent
Instructional	111	83	11	8	8	6	3	2	1	
Control	89	83	13	12	2	2	3	3	1	

10. If you were a recent high school graduate (or dropout) and wanted help in find a job, which one of the following agencies would generally be the best place to go?
   1. Regional office of the U.S. Department of Labor.
   2. Nearest Job Corps Training Center.
   3. Chamber of Commerce in your city.
   *4. Local office of Ohio Bureau of Employment Services.

Answer / Group	1		2		3		4*		NO RESPONSE	
	number	percent	number	percent	number	percent	number	percent	number	percent
Instructional	4	3	16	12	3	2	111	83	-	
Control	1	1	7	7	4	4	94	89	-	

11. Between 1970 and 1980 employment in the nation will probably increase most in which one of the following industry groups?
   *1. Wholesale and retail trade.
   2. Manufacturing.
   3. Agriculture.
   4. Mining.

Answer / Group	1*		2		3		4		NO RESPONSE	
	number	percent	number	percent	number	percent	number	percent	number	percent
Instructional	28	21	86	65	12	9	7	5	1	
Control	17	16	73	68	12	11	6	6	-	

12. Gross National Product is a measure of the:
    1. quantity of goods and services sold during the year by private business firms.
    2. part of total production which is purchased by the federal government.
    *3. value of a nation's annual output of goods and services.
    4. income received by all persons, before taking out taxes.

Answer / Group	1		2		3*		4		NO RESPONSE	
	number	percent	number	percent	number	percent	number	percent	number	percent
Instructional	27	20	5	4	93	69	9	7	-	
Control	16	15	4	4	83	78	4	4	1	

13. According to behavioral science studies, which one of the following workers is likely to have the most self-respect and feeling of personal worth?
    *1. Herman Jones, a man who is continuously successful on his job.
    2. "Hoop" Thompson, a former junior college basketball star who now works on a car wash line.
    3. Miss Veronica Green, 30-year-old secretary in a typing pool, who was selected Homecoming Queen in her senior year of high school.
    4. John Andrews, who gets the highest salary.

Answer / Group	1*		2		3		4		NO RESPONSE	
	number	percent	number	percent	number	percent	number	percent	number	percent
Instructional	115	86	5	4	6	4	3	6	-	
Control	92	86	6	6	3	3	6	6	1	

14. The term "economic resources" is defined by economists to include:
    1. shares of stock in a corporation.
    *2. everything that can be used in production.
    3. profits and dividends.
    4. labor, money, advertising, and capital.

Answer / Group	1		2*		3		4		NO RESPONSE	
	number	percent	number	percent	number	percent	number	percent	number	percent
Instructional	3	2	62	47	11	8	57	43	1	
Control	2	2	41	39	15	14	48	45	2	

(15.) Industrial studies show that low worker morale on an assembly line is most likely to result when the:
1. workers go to different churches.
2. foreman insists that each man follow the company policy of wearing his safety helmet.
3. workers all belong to the same union.
*4. foreman doesn't allow workers to talk to one another.

Answer / Group	1		2		3		4*		NO RESPONSE	
	number	percent	number	percent	number	percent	number	percent	number	percent
Instructional	4	3	1	1	16	12	112	84	1	
Control	1	1	6	6	16	15	85	79	-	

(16.) Which of the following jobs usually requires the most years of training?
1. Automobile assembly-line worker.
2. Department store sales clerk.
3. Waitress.
*4. Journeyman plumber.

Answer / Group	1		2		3		4*		NO RESPONSE	
	number	percent	number	percent	number	percent	number	percent	number	percent
Instructional	20	15	11	8	2	1	101	75	-	
Control	14	13	3	3	2	2	89	82	-	

17. The total lifetime earnings (from age 18 to 64) of male high school graduates exceed the lifetime earnings of high school dropouts by approximately:
1. 2 per cent.
*2. 15 per cent.
3. 50 per cent.
4. no difference.

Answer / Group	1		2*		3		4		NO RESPONSE	
	number	percent	number	percent	number	percent	number	percent	number	percent
Instructional	4	3	69	51	59	44	2	1	-	
Control	2	2	51	47	51	47	4	4	-	

18. The "opportunity cost" of a new public high school is the:
*1. other economic goods that must be given up in order to build the school.
2. increase in taxes that people have to pay.
3. cost of constructing the school now as opposed to the cost of building the new school at a later date.
4. profits that can be earned on the project by the construction company.

Answer / Group	1*		2		3		4		NO RESPONSE	
	number	percent	number	percent	number	percent	number	percent	number	percent
Instructional	23	17	26	20	76	57	8	6	1	
Control	8	7	38	35	53	49	9	8	-	

19. The total number of job opportunities available in 1930 will be greatest for:
1. coal miners.
*2. elementary school teachers.
3. journeyman electricians.
4. airline stewardesses.

Answer / Group	1		2*		3		4		NO RESPONSE	
	number	percent	number	percent	number	percent	number	percent	number	percent
Instructional	6	4	40	30	75	56	13	10	-	
Control	8	8	22	21	63	59	13	12	2	

20. The money that is used to pay the costs of building and operating public schools comes mainly from:
1. tuition and special fees and charges paid by parents of school children.
2. the federal government.
*3. property taxes paid by home-owners and business in the local community, plus funds from the state government.
4. payments from the state government based on the needs of individual pupils enrolled in the schools.

Answer / Group	1		2		3*		4		NO RESPONSE	
	number	percent	number	percent	number	percent	number	percent	number	percent
Instructional	2	2	11	8	108	81	12	9	1	
Control	4	4	10	9	88	81	6	6	-	

21. The primary goal of labor unions in the United States historically has been to:
*1. get higher wages, shorter hours and improved working conditions for their members.
2. establish a separate political party to gain control over the national government.
3. overthrow the basic institutions of capitalism and replace them with socialism.
4. call strikes and set up picket lines.

Answer / Group	1*		2		3		4		NO RESPONSE	
	number	percent	number	percent	number	percent	number	percent	number	percent
Instructional	124	93	4	3	4	3	2	1	1	
Control	97	91	3	3	5	5	2	2	1	

22. The percentage rate of return on total resources invested in education (comparing costs of additional schooling with the extra earnings of people having more education) is highest for completion of which level of education?
*1. Completion of the eighth year of school.
2. Completion of the senior year of high school.
3. Completion of one year of college.
4. Completion of the fourth year of college.

Answer / Group	1*		2		3		4		NO RESPONSE	
	number	percent	number	percent	number	percent	number	percent	number	percent
Instructional	5	4	32	24	18	14	78	59	1	
Control	4	4	25	23	11	10	67	63	1	

23. The basic problems that face every economic system, including the American economy, are:
1. how to increase profits, how to eliminate poverty, and what jobs government should assign to men and women 18 years and older.
*2. what goods and services to produce, how much to produce, and how to distribute the nation's income among the various members of the society.
3. how to increase the supply of money, deciding the kinds of goods and services to produce, and guaranteeing that every worker receives equal earnings.
4. preventing government from interfering in the economy, producing the largest possible volume of goods and services, preserving the rights of property.

Answer / Group	1		2*		3		4		NO RESPONSE	
	number	percent	number	percent	number	percent	number	percent	number	percent
Instructional	24	18	85	64	12	9	12	9	1	
Control	19	18	55	51	20	19	14	13	-	

(24.) Wages of American workers are high chiefly because:
1. the government sets wage rates.
*2. the productivity of the American worker is high.
3. employers believe they have a social responsibility to pay high wages.
4. most workers belong to strong labor unions.

Answer / Group	1		2*		3		4		NO RESPONSE	
	number	percent	number	percent	number	percent	number	percent	number	percent
Instructional	21	16	64	48	5	4	44	33	-	
Control	16	15	45	42	3	3	44	41	-	

25. Which procedures would most likely be used by a person who wanted to follow the "steps in sound economic reasoning" to decide on a plan for preventing inflation?
1. Identify the problem, decide on a solution, see how this will affect your own economic self-interest, think of policies that other people might suggest, and then find arguments against the other solutions.
*2. Define the problem, identify appropriate goals, consider alternative possible solutions, study the probable effects of the different solutions, and choose the best solution in terms of your stated goals.
3. Identify the goals, study the problems, consider alternative solutions, pick the best solution, and prepare arguments to defend your choice.
4. Define the goals, identify the key facts, decide on the best policy, study the most likely results of using that policy, and stick to your choice against all criticism.

Answer / Group	1		2*		3		4		NO RESPONSE	
	number	percent	number	percent	number	percent	number	percent	number	percent
Instructional	12	9	78	58	30	22	14	10	-	
Control	8	7	59	55	24	22	17	16	-	

(26.) By 1980, women will make up what proportion of the civilian labor force in Ohio?
1. About one-tenth.
2. About one-fifth.
*3. About two-fifths.
4. A little over one-half.

Answer / Group	1		2		3*		4		NO RESPONSE	
	number	percent	number	percent	number	percent	number	percent	number	percent
Instructional	6	4	20	15	82	61	26	19	-	
Control	10	9	19	18	57	53	22	20	-	

(27.) The term "labor productivity" is defined by economists to mean the:
1. total quantity of goods and services that workers produce.
2. average number of hours in the work week.
*3. total output of goods and services divided by total number of man-hours worked.
4. quantity of goods that workers can produce without the aid of machinery and equipment.

Answer / Group	1		2		3*		4		NO RESPONSE	
	number	percent	number	percent	number	percent	number	percent	number	percent
Instructional	35	26	7	5	77	58	14	11	1	
Control	32	30	7	7	57	54	10	9	2	

28. In peacetime, the level of unemployment for the nation generally is greater when:
1. total spending on goods and services in the economy is too high.
2. there is rapid inflation.
*3. total spending on goods and services in the economy is too low.
4. Personal Income is rising rapidly.

Answer / Group	1		2		3*		4		NO RESPONSE	
	number	percent	number	percent	number	percent	number	percent	number	percent
Instructional	8	6	55	41	64	48	7	5	-	
Control	18	17	36	34	46	43	6	6	2	

(29.) According to studies of the attitudes that American workers have toward their jobs, which one of the following statements is least supported by the findings?
1. Workers feel that their jobs do influence their choice of friends and social life.
*2. Workers consider the amount of pay to be by far the most important factor in their job.
3. Workers feel that the reason they are paid is because they are making a contribution to production.
4. Workers feel that their job affects their whole style of life.

Answer / Group	1		2*		3		4		NO RESPONSE	
	number	percent	number	percent	number	percent	number	percent	number	percent
Instructional	22	17	52	39	40	30	19	14	1	
Control	17	16	30	28	39	37	20	19	2	

30. Automation appeals to many employers because it promises to:
1. decrease the variety of goods produced.
2. increase the number of job opportunities for workers.
3. increase the tax revenues of state and local government.
*4. increase profits by lowering production costs.

Answer / Group	1		2		3		4*		NO RESPONSE	
	number	percent	number	percent	number	percent	number	percent	number	percent
Instructional	6	4	25	19	7	5	96	72	-	
Control	5	5	18	17	8	8	75	71	2	

31. Which one of the following is the best explanation or illustration of "real income"?
1. Actual number of dollars that a worker earns from his job.
2. Wage-and-salary income after payment of federal income taxes.
*3. The quantity of goods and services that a person can purchase with the dollars he earns.
4. The standard of living that a family gets used to.

Answer / Group	1		2		3*		4		NO RESPONSE	
	number	percent	number	percent	number	percent	number	percent	number	percent
Instructional	32	24	27	20	69	51	6	4	-	
Control	22	21	34	32	45	42	5	5	2	

(32.) Education that increases the knowledge and skills of workers, will usually lead to:
1. higher costs of production.
*2. greater production per man-hour worked.
3. higher prices for goods and services.
4. an increase in the supply of unskilled workers.

Answer / Group	1		2*		3		4		NO RESPONSE	
	number	percent	number	percent	number	percent	number	percent	number	percent
Instructional	10	7	89	66	22	16	13	10	-	
Control	17	16	70	67	14	13	4	4	3	

33. Forecasts of the amount of leisure time that will be available to workers by 1980 indicate that leisure time will:
1. decrease a great deal.
2. decrease slightly.
3. stay about the same.
*4. increase slightly.

Answer / Group	1		2		3		4*		NO RESPONSE	
	number	percent	number	percent	number	percent	number	percent	number	percent
Instructional	11	8	8	6	15	11	100	75	-	
Control	3	3	9	8	12	11	82	77	2	

34. Many people would argue that school teachers are far more valuable to the economy than major league baseball players. Yet, many ball players are paid more than teachers. Which of the following is the best explanation for the differences in salaries between the two groups?
1. Ball players are really entertainers rather than producers.
2. The job of a major league ball player requires more college education than teaching requires.
3. There are fewer major league ball players than teachers.
*4. Major league ball players are scarcer relative to the demand for their services than are teachers.

Answer / Group	1		2		3		4*		NO RESPONSE	
	number	percent	number	percent	number	percent	number	percent	number	percent
Instructional	48	36	3	2	24	18	59	44	-	
Control	35	33	7	7	13	12	51	48	2	

35. Mr. J. C. Sharp, a college-educated business executive, worked as a garbage man for a month as an experiment. He decided that he would not like the job on a permanent basis even if it paid more than his executive salary. According to psychologists, which one of the following reasons would best explain why he would not find the work satisfying?
1. He does not have any employees to boss around.
*2. Collecting garbage does not challenge him to make use of his special abilities, training, and experience.
3. He had to take his thirty-minute lunch break when the driver of the garbage truck told him to eat.
4. Some people throw broken glass in the garbage and this is dangerous for the garbage collectors.

Answer / Group	1		2*		3		4		NO RESPONSE	
	number	percent	number	percent	number	percent	number	percent	number	percent
Instructional	7	5	118	89	5	4	3	2	1	
Control	4	4	89	85	6	6	6	6	3	

36. The number of years of schooling that the average (median) American worker has completed is:
1. 6 years.
2. 8 years.
3. 10 years.
*4. 12 years.

Answer / Group	1		2		3		4*		NO RESPONSE	
	number	percent	number	percent	number	percent	number	percent	number	percent
Instructional	6	4	13	10	47	35	68	51	-	
Control	4	4	10	10	28	27	63	60	3	

37. The demand for carpenters is most likely to increase when:
*1. incomes of potential home buyers rise.
2. costs of home construction increase.
3. the unemployment rate goes up.
4. the price of lumber increases.

Answer / Group	1*		2		3		4		NO RESPONSE	
	number	percent	number	percent	number	percent	number	percent	number	percent
Instructional	109	81	12	9	5	4	8	6	-	
Control	75	71	23	22	6	6	1	1	3	

38. Some economic activities yield benefits that go almost entirely to a single individual, such as a haircut you purchase from a barber. In other cases, society-as-a-whole benefits from an activity, such as maintaining a strong military force for national defense. Which one of the following is the best illustration of a benefit that goes to society-as-a-whole rather than just to a particular individual?
1. As a result of taking a high school course in auto mechanics, you are able to repair your own car.
2. After graduating from college last June, you are hired as an odds-maker at the local race track.
*3. Free public schools make it possible for you to improve your general communications and arithmetic skills.
4. You increase your chances of getting a higher salary by taking a course in shorthand.

Answer / Group	1		2		3*		4		NO RESPONSE	
	number	percent	number	percent	number	percent	number	percent	number	percent
Instructional	13	10	16	12	92	69	13	10	-	
Control	16	15	14	13	63	59	13	12	2	

(39.) Which one of the following combinations of characteristics would probably increase the number of full-time job opportunities available to you?

1. One year of college, having general job skills, no employment experience, will not move out of city to get a job.
*2. High school graduate, trained as a tool and die maker, with employment experience, willirgness to move out of state to get a job.
3. High school graduate, skilled as a farm equipment operator, no employment experience, will not move out of the state to get a job.
4. Elementary school graduate, possession of general job skills, employment experience, will move to a nearby city to get a job.

Answer / Group	1		2*		3		4		NO RESPONSE	
	number	percent	number	percent	number	percent	number	percent	number	percent
Instructional	9	7	101	75	9	7	15	11	-	
Control	11	10	74	70	9	9	11	10	3	

40. Look at the (imaginary) statistics in the table, and pick the year when the Slobovian economy came closest to achieving the goals of full employment, growth in output, and stable prices.

Year	Gross National Product (billions) of dollars	Labor force (millions)	Employment (millions)	Consumer Price Index
1961	305.4	62.1	54.7	114.0
1962	306.2	63.2	53.1	117.4
1963	320.1	64.3	62.8	118.1
1964	333.6	66.7	63.7	123.4

1. 1961.
2. 1962.
*3. 1963.
4. 1964.

Answer / Group	1		2		3*		4		NO RESPONSE	
	number	percent	number	percent	number	percent	number	percent	number	percent
Instructional	8	6	9	7	47	36	68	52	2	
Control	4	4	14	13	48	46	39	37	3	

next decade. Two-thirds of both instructional and control subjects were apparently unaware that job opportunities in manufacturing are growing at a much slower rate than in wholesale and retail trade (as well as government and the service industries).[5/] In a similar vein, less than a third of either treatment group was aware that despite the surplus of teachers expected in the future, the total number of job opportunities in 1980 (item 19) will still be greater for elementary school teachers than for coal miners, journeyman electricians, or airline stewardesses.[6/]

With regard to occupational skills likely to be most valuable to a worker over the next 20 to 30 years (question 4), over half of the subjects in each group felt that skills highly specialized to a particular job would be more valuable than general communications and interpersonal relations skills.

The great national concern in recent years with productivity issues apparently is not fully understood by this sample of young people. Large percentages of the subjects in both groups failed to demonstrate a clear understanding of the relationship between wages and productivity examined in question 24. Fifteen percent felt that wages were high chiefly because government sets wage rates, while more than a third felt wages were high because most workers belong to strong labor unions. Only about 45% said wages of American workers were high because their productivity was high. In the area of earnings,

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5/ Projections by the Bureau of Labor Statistics for the period 1968-1980 indicate that the trade sector of the economy will provide about 4 million new jobs while manufacturing will be generating slightly more than half that many. See The U.S. Economy in 1980, A Summary of BLS Projections, Bulletin 1673, U.S. Department of Labor, Washington, D.C., 1970.

6/ Occupational projections by BLS indicate 1.25 million elementary school teachers will be required in 1980, with 56,300 average annual openings. All coal mining occupations are projected to employ less than 100,000 persons, the total requirements for electricians will be about 575,000 workers (with 20,400 annual openings) and for airline stewardesses about 65,000. Loc. cit.

the subjects were asked (question 17) how much the total lifetime earnings of male high school graduates exceed the lifetime earnings of high school dropouts. Only about half of the subjects gave the correct answer of 15%. Most of the remainder of the subjects believed the difference was closer to 50%. Conceptions of income per person in Ohio were also generally poor, with less than 40% of the subjects giving the correct response of $3500 per year (question 5). And only half of the subjects exhibited a clear understanding of what "real income" meant (question 31).

Another area of increasing concern of late (and a major theme of the MEE course) has been the nonpecuniary dimensions of work. Question 29 concerned the results of research into attitudes held by American workers toward their jobs. Least supported by available research is the notion that workers consider the amount of pay to be by far the most important factor in their jobs. Only 39% of the instructional students appeared to be aware of these findings, and even fewer (28%) of the control students answered correctly.[7/]

A potential source of disappointment to young workers is finding that their expectations concerning the nature of a new job were not realistic. The response pattern to question 6, for example, indicates that the control group may have a less well developed understanding of the specific duties associated with various types of jobs. Less than half of the control subjects, compared with 65% of the instructional subjects, knew what type of job was performed by a technician.

5-4. Conclusions

Whichever instrument is used to measure world-of-work understanding, METU or SMETU, the experimental course had a highly significant influence on the

7/ See Section 6-3 below for some additional discussion of attitudes toward the noneconomic dimensions of work.

instructional group in the short run. Four and one-half years after the experiment, testing indicated that the instructional group had retained the level of understanding achieved in 1968 but had not improved upon it. Meanwhile, between 1968 and 1972, the control students -- through a variety of school and nonschool experiences, not including a special one-semester world-of-work course -- had increased their understanding to a level virtually equal to the instructional group. Closer examination of the test results indicates that many of the questions frequently missed by both instructional and control subjects represent areas of information most applicable to career planning and preparation for entering the world of work. These areas include knowledge of occupational and industrial employment trends (questions 11 and 19), useful skills for a changing economy (question 4), and the nature of work and the workplace (questions 6 and 29). This possibly explains why we find (in Section 8-2 below) no apparent relationship between METU or SMETU test scores and labor force success.[8/]

8/ World-of-work understanding of the dropout sample is discussed in Section 7-3 below.

SECTION 6
MEASURED IMPACT OF THE COURSE ON WORLD-OF-WORK ATTITUDES

It was suggested in Section 1-2 that functional world-of-work attitudes are an important form of human capital, though not always recognized as such. In the MEE experiment, a major hypothesis concerned the effects of a manpower and economic education course on the attitudes of those who took it. We begin this section by summarizing the results obtained in 1968 on the extent of short-run attitude changes induced by the MEE course. We then proceed to examine the results of the 1972 follow-up survey to determine if, after four years, any effects of the course on attitudes still remained.

6-1. Recapitulation of Short-Run Impact

Evaluation of the short-run impact of MEE on world-of-work attitudes was accomplished by comparing pre and post-course responses to the SOMEA instrument. It was found that subjects in the instructional group had changed their opinions significantly on 34% of the items in the SOMEA inventory whereas the control subjects had changed their opinions on only 18% of the items.[1/] In addition, the control group chose "undecided" as a post-test modal response on 10 items while the instructional subjects were "undecided" on only one of the 62 items. These results strongly suggested that the MEE course not only influenced particular world-of-work attitudes of the instructional students but also

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1/ Changes in the instructional group were recorded on 21 of the original 62 items. The criteria established for the determination of changes were based on the overall mode of response, i.e., generally agree (including "strongly agree" and "agree"), generally disagree (including "strongly disagree" and "disagree"), or "undecided". A significant change was defined as either a shift in the nature of the modal response (e.g., from generally agree to generally disagree, or from undecided to generally agree or generally disagree, or vice versa) or by a change of 10 percentage points or more in the frequency with which the given modal response was selected. See pp. 22-33 in MD/OAEL Final Report for discussion of short-run impact.

helped them make up their minds more definitely on manpower and economic matters. No attempt was made to define "good" or "bad" attitudes nor was any analysis made of particular attitude changes or possible reasons for such changes.[2/]

Additional evidence suggesting that the MEE course had significant short-run impact on world-of-work attitudes was found in the evaluation of the course itself by students and teachers. Following MEE instruction, the experimental subjects were asked (January 1968) to evaluate the course in terms of interest generated, amount of learning that took place, difficulty, and value for future decisionmaking. These evaluations are reproduced as Table 6-I.1.[3/] Almost half (47%) of the students gave the course an overall rating of "Outstanding" or "Above Average", and 67% rated the course in one of these two categories in terms of its value for future decisions and actions (see question 5 in Table 6-i.i).

More than 80% of the subjects who took the course said that it had caused them "to take a careful look at /themselves/ and what /they/ wanted to do with /their/ lives." And nearly two-thirds of the students indicated that they now realized more than ever the great importance of getting a good education.

[2/] Subsequent to completion of the 1966-68 project, MEE data were used in a study by Dennis O'Donnell (A Factor Analysis of Work-Related Attitudes, Colorado State University, 1970) with the finding that "The aggregate instructional population showed increased levels of understanding, increased confidence in ability to deal with the environment, more sensitivity to the welfare of consumers and workers vis-a-vis the market, a more positive attitude toward large institutions such as labor unions and government, a more favorable attitude toward education, and a change in attitude more inclined toward individual effort as the determiner of economic welfare." The sample used in O'Donnell's study included 8th graders from Zanesville, Ohio, as well as the Lancaster group.

[3/] Reproduced from MD/OAEL Final Report, page A-28. Since this table includes all Lancaster 8th graders plus Zanesville 8th graders who took the course, it is not strictly comparable to the Lancaster ADI instructional group for which 1972 follow-up results are reported below.

Table 6-1.1

Student Evaluation of Experimental MD/OAEL Course*

(8th grade)

EVALUATION STATEMENT	"Outstanding" (Highest Rating)		"Above Average"		"Average"		"Below Average"		"Poor" (Lowest Rating)		EVALUATION INDEX**
	No.	%	No.	%	No.	%	No.	%	No.	%	
1. "Compared with other courses I have taken, I would give this course an OVERALL RATING of:	80	15	166	32	205	39	52	10	19	4	3.5
2. "Compared with other courses I have taken, my INTEREST in this course has been:	64	12	133	25	202	39	78	15	46	9	1.6
3. "Compared with other courses I have taken, the amount that I LEARNED is:	152	29	124	24	169	32	42	8	34	7	3.6
4. "Compared with other courses I have taken, the DIFFICULTY I had with this course was:	50	10	82	16	149	29	107	21	131	25	.6***
5. "Compared with other courses I have taken, the VALUE of this course for my FUTURE decisions and actions is:	157	30	190	37	121	23	25	5	26	5	6.8

*Written multiple choice responses of 523 eighth grade students in six junior high schools at Lancaster and Zanesville, Ohio (January 1968).

**Ratio of above-average responses (e.g. "Outstanding" + "Above Average") to below-average responses (e.g. "Below Average" + "Poor").

***Means that six-tenths as many students rated the course above average in difficulty as those who rated it below average in difficulty.

SOURCE: MD/OAEL Final Report, p. A-28.

Teachers and school officials also pointed to some of the influence the course had on attitudes and values. One teacher noted, for example, that "the students did develop an awareness of society's future expectations from them; they did seem to develop an understanding of the need for furthering their education," and another said that he had "observed many changes in specific attitudes, such as: from 'school is boring' to 'why drop out; that is dumb'."[4/]

6-2. Longer-Run Impact

In order to determine effects of the MEE course on world-of-work attitudes in the longer run, responses to the 1972 follow-up "Expanded Survey of Manpower and Economic Attitudes" (SOMEAX) were tabulated separately for instructional and control groups in Table 6-3.1 below. A X^2 statistic was then calculated for each of the 73 items in the SOMEAX inventory to test the null hypothesis that the distribution of responses was independent of the MEE treatment grouping. It was found that the response distribution was not independent of MEE treatment (at $p \leq .10$ levels of significance) on 12 (or 16%) of the items, which therefore merit further study.[5/] In less formal terms, there appeared to be meaningful differences between the instructional and control subjects on a little less than one-fifth of the statements included on the SOMEAX instrument. Analysis of the nature of these differences is reported in section 6-3 below.

As part of the 1972 follow-up testing, subjects were asked if they recalled taking the MEE course in 8th grade.[6/] As shown in Table 6-2.1, nearly 90% of the ADI instructional subjects said they did recall taking MEE. Those who

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[4/] Final Report, p. 33.

[5/] This is only slightly more than one would expect due to pure chance. Probability levels for rejecting the null hypothesis of independence as well as the calculated X^2 are given for each statement in Table 6-3.1 in the far right column. The 12 items are indicated by * next to number of the item.

[6/] See section F of the Student Questionnaire, Appendix B-6.

Table 6-2.1

Instructional Group 1972 Recollections of the Experimental Manpower Economics Course (ADI)

A. Did subject recall taking MEE course in 8th grade?

	YES	NO	TOTAL
number	118	16	134
percent	88%	12%	100%

B. If yes, did subject remember how he felt about the course at the time it was taken? Subject thought it was--

	OUTSTANDING	ABOVE AVERAGE	AVERAGE	BELOW AVERAGE	POOR	TOTAL	NO RESPONSE
number	12	21	55	18	15	134	13*
percent	10%	17%	46%	15%	12%	100%	-

C. Did subject feel that experimental course influenced his behavior in school success, employment experience, career planning, etc.?

	YES	NO	TOTAL	NO RESPONSE
number	44	77	134	13
percent	36%	64%	100%	-

D. Compared with other courses currently offered in junior high school, did subject think that MEE course would be worthwhile for all 8th graders to take?

	DEFINITELY SHOULD TAKE	SHOULD TAKE	NO, NOT THAT VALUABLE	NO, A WASTE OF TIME	TOTAL	NO RESPONSE
number	40	45	26	16	134	7
percent	32%	35%	20%	13%	100%	-

* Included in the total of 134 ADI subjects but excluded from percentage calculations.

remembered taking the class were also asked if they remembered how they felt about the course at the time it was taken. In retrospect (Table 6-2.1, B), only 27% of the ADI instructional subjects said they thought is was "Outstanding" or "Above Average" (compared with 47% in 1968), while 46% rated it average and 27% below average. Thus Table 6-2.1 appears to indicate an erosion of the strongly positive feelings about the course held by the subjects immediately following instruction. Moreover, while 67% of the subjects felt in 1968 that the course would affect their future decisions, only 36% said in 1972 that the course actually did affect their behavior up to that time.[7/] On the other hand, 67% of the subjects felt that compared with other courses currently offered in junior high school, the MEE course would be worthwhile for all 8th graders to take (Table 6-2.1, D).

A potentially important factor in early world-of-work success is the confidence possessed by a young person in his ability to make the transition from school to work. One of the questions on the May 1972 Student Questionnaire asked the subjects directly whether they felt ready to enter the world of work.[8/] As seen in Table 6-2.2 nine out of 10 students expressed confidence about their readiness for employment; however, the MEE course appears to have had no impact on giving the instructional students a greater feeling of readiness for the school-to-work transition than their control-group counterparts.

7/ We feel that despite the difference between the number who said they expected the course to affect their behavior and the number whose expectations were actually fulfilled, the 36% figure represents a significant impact.

8/ See question C-6, Student Questionnaire, Appendix B-6.

Table 6-2.2

Perceived Readiness for Transition from School to Work, Instructional vs Control (ADI) (Response to question: "Do you feel that you are ready to make the change from school to work?")

	Yes		No		Total		No Response
	No.	%	No.	%	No.	%	
Instructional	108	85	19	15	134	100	7
Control	96	89	11	11	108	100	1

H_o: Subject's readiness for transition from school to work not associated with enrollment in the MEE course.

$X^2 = 0.755$ Reject H_o only at $p \geq 0.3848$

$df = 1$

6-3. SOMEAX Item Analysis, 1972 Follow-up Survey

We now return for expanded treatment to a topic introduced in the preceding section, viz., item analysis and factor analysis of the 1972 follow-up survey of attitudes.

One of the first lessons in the MEE course dealt with the nature and functions of work. The lesson emphasized that in addition to meeting economic needs, work can also serve as a source of human development and personal fulfillment. It is interesting to note that many of the attitude differences between the groups were centered on the issue of the pecuniary returns to work. For example (see Table 6-3.1), 81% of the control subjects, compared to 59% of those who took the MEE course, either agreed or strongly agreed with statement 39 that the only reason most people work is for the money. And, 13% of the controls versus 5% of the instructional subjects strongly agreed that they wouldn't care what their job was like as long as the pay was high (item 23). As a further indication that control subjects appear to be somewhat more disposed toward work only as a means of earning a living, 17% (compared to 6% of the instructional group)

Table 6-3.1

Item Analysis of SOMEAX, 1972 Follow-up Survey, Instructional vs Control (ADI)

		NUMBER AND PERCENTAGE OF RESPONSES												Test Statistics
		"Strongly Agree"		"Agree"		"Undecided"		"Disagree"		"Strongly Disagree"		TOTAL		
		No.	%	No.	%	No.	%	No.	%	No.	%	(N)		
1. Workers with more schooling deserve higher wages than workers with less schooling.	I	37	28	34	25	14	10	36	27	13	10	134		$X^2 = 6.85$
	C	35	32	31	29	5	5	20	19	17	16	108		significant at p = .14
2. What is good for American workers is good for the American economy.	I	10	7	40	30	46	34	33	25	5	4	134		$X^2 = 3.30$
	C	5	5	34	31	44	41	19	18	6	6	108		p = .51
3. Labor unions deserve credit for improving the life of the working man.	I	25	19	74	55	23	17	10	7	2	1	134		$X^2 = 4.70$
	C	32	30	55	51	13	12	6	6	2	2	108		p = .32
4. Employers would rather hire older people (over 35) than younger people (under 20).	I	21	16	43	32	27	20	31	23	12	9	134		$X^2 = 1.94$
	C	19	18	33	31	20	19	21	19	15	14	108		p = .75
5. To be really successful, I am going to have to give up some present enjoyment for the sake of future goals.	I	33	25	59	44	19	14	20	15	3	2	134		$X^2 = 4.55$
	C	39	36	43	40	10	9	13	12	3	3	108		p = .34
6. A good reasons for quitting a job is that you don't like the people you work with.	I	8	6	37	28	19	14	55	41	15	11	134		$X^2 = 4.57$
	C	11	10	28	26	9	8	42	39	18	17	108		p = .34

		NUMBER AND PERCENTAGE OF RESPONSES												Test Statistics
		"Strongly Agree"		"Agree"		"Undecided"		"Disagree"		"Strongly Disagree"		TOTAL		
		No.	%	No.	%	No.	%	No.	%	No.	%	(N)		
7. Too much spending by the federal government is the main cause of inflation.	I	18	13	41	31	46	34	28	21	1	1	134		$X^2 = 5.52$
	C	17	16	28	26	44	41	15	14	4	4	108		p = .24
8. A more equal distribution of income than we presently have would be a good thing for America.	I	25	19	50	37	34	25	18	13	7	5	134		$X^2 = 2.83$
	C	12	11	44	41	32	30	14	13	6	6	108		p = .59
9. A married worker with a family should be paid more than a single worker even if both do exactly the same work.	I	7	5	7	5	8	6	52	39	60	45	134		$X^2 = 1.56$
	C	7	6	9	8	7	6	36	33	49	45	108		p = .82
10. Making personal sacrifices in order to get ahead is not as important today as it used to be.	I	5	4	35	26	29	22	43	32	22	16	134		$X^2 = 2.37$
	C	4	4	26	24	28	26	27	25	23	21	108		p = .67
11. Actually, whatever success I have in my work career depends pretty much on factors beyond my control.	I	3	2	18	13	15	11	63	47	35	26	134		$X^2 = 6.91$
	C	2	2	16	15	25	23	40	37	25	23	108		p = .14
12. The sharp reduction in number of people working on farms during the past 20 years is something for the American people to be happy about.	I	4	3	12	9	26	19	60	45	32	24	134		$X^2 = 2.30$
	C	2	2	6	6	27	25	50	46	23	21	108		p = .68

Table 6-3.1 (cont.)

		NUMBER AND PERCENTAGE OF RESPONSES											
		"Strongly Agree"		"Agree"		"Undecided"		"Disagree"		"Strongly Disagree"		TOTAL	Test Statistics
		No.	%	No.	%	No.	%	No.	%	No.	%	(N)	
13. If a person plans his education and training carefully, he is almost sure to succeed in his job career.	I	27	20	68	51	14	10	23	17	2	1	134	$X^2 = 7.50$
	C	19	18	52	48	4	4	30	28	3	3	108	$p = .11$
14. Most employers are sincerely interested in the welfare of their workers.	I	8	6	54	40	35	26	31	23	6	4	134	$X^2 = 1.07$
	C	6	6	42	39	24	22	30	28	6	6	108	$p = .90$
15. Since the future is so uncertain, it is best to get everything you can out of the present.	I	38	28	55	41	22	16	14	10	5	4	134	$X^2 = 1.92$
	C	33	31	40	37	23	21	10	9	2	2	108	$p = .75$
16. Automation is good for America and ought to be encouraged.	I	7	5	40	8	34	12	16	55	4	54	134	$X^2 = 2.50$
	C	11	3	34	21	31	11	18	35	6	38	108	$p = .65$
17. Labor unions are too strong today.	I	7	5	29	22	53	40	40	30	5	4	134	$X^2 = 7.78$
	C	12	11	19	18	30	28	39	36	8	7	108	$p = .10$
18. If someone gave me all the money I needed, I'd never go to work.	I	8	6	27	20	19	14	47	35	33	25	134	$X^2 = 10.72$
	C	18	17	16	15	22	20	27	25	25	23	108	$p = .03$

Table 6-3.1 (cont.)

		NUMBER AND PERCENTAGE OF RESPONSES												Test Statistics
		"Strongly Agree"		"Agree"		"Undecided"		"Disagree"		"Strongly Disagree"		TOTAL		
		No.	%	No.	%	No.	%	No.	%	No.	%	(N)		
19. You can't get a job as a carpenter, plumber, or electrician unless you have "connections" with a labor union.	I	3	2	13	10	33	25	68	51	17	13	134		$x^2 = 5.86$
	C	5	5	17	16	33	31	41	38	12	11	108		p = .21
20. It is better to set goals low rather than too high.	I	5	4	8	6	12	9	55	41	54	40	134		$x^2 = 10.93$
	C	3	3	21	19	11	10	35	32	38	35	108		p = .03
21. The government should guarantee everybody in the country a decent standard of living.	I	24	18	54	40	21	16	23	17	12	9	134		$x^2 = 2.85$
	C	22	20	40	37	12	11	26	24	8	7	108		p = .58
22. Our country's economic progress is due mainly to the free enterprise system.	I	15	11	61	46	54	40	4	3	0	0	134		$x^2 = 2.15$
	C	9	8	57	53	37	34	5	5	0	0	108		p = .54
23. I wouldn't care what my job was like, as long as the pay was high.	I	2	1	6	4	12	9	53	40	61	46	134		$x^2 = 9.53$
	C	7	6	8	7	8	7	52	48	33	31	108		p = .05
24. The farmer is the person who contributes most to our economic well-being.	I	7	5	34	25	57	43	33	25	3	2	134		$x^2 = 4.90$
	C	12	11	25	23	36	33	31	29	4	4	108		p = .30

		NUMBER AND PERCENTAGE OF RESPONSES											
		"Strongly Agree"		"Agree"		"Undecided"		"Disagree"		"Strongly Disagree"		TOTAL	Test Statistics
		No.	%	No.	%	No.	%	No.	%	No.	%	(N)	
25. The world is changing so fast it really isn't worthwhile to plan as far ahead as twenty years.	I	6	4	57	43	18	13	46	34	7	5	134	$X^2 = 9.08$
	C	13	12	39	36	16	15	28	26	12	11	108	$p = .06$
26. Business should be controlled and regulated by government to protect the interests of the consumer.	I	7	5	43	32	28	21	39	29	17	13	134	$X^2 = 1.62$
	C	7	6	37	34	27	25	25	23	12	11	108	$p = .81$
27. All honest work is worthwhile, and therefore all workers deserve respect.	I	40	30	58	43	21	16	12	9	3	2	134	$X^2 = 6.01$
	C	43	40	42	39	8	7	13	12	2	2	108	$p = .20$
28. Work is a necessary evil.	I	8	6	28	21	24	18	50	37	24	18	134	$X^2 = 4.92$
	C	13	12	20	19	12	11	40	37	23	21	108	$p = .30$
29. Most American workers are paid just about what they deserve.	I	2	1	24	18	38	28	53	40	17	13	134	$X^2 = 9.90$
	C	4	4	25	23	15	14	42	39	22	20	108	$p = .04$
30. People would be better off if they spent more time enjoying the present and less time making plans for the future.	I	11	8	35	26	33	25	47	35	8	6	134	$X^2 = .35$
	C	11	10	29	27	26	24	36	33	6	6	108	$p = .99$

		NUMBER AND PERCENTAGE OF RESPONSES											
		"Strongly Agree"		"Agree"		"Undecided"		"Disagree"		"Strongly Disagree"		TOTAL	Test Statistics
		No.	%	No.	%	No.	%	No.	%	No.	%	(N)	
31. You can't believe government statistics.	I	10	7	28	21	54	40	36	27	6	4	134	$x^2 = 1.01$
	C	11	10	25	23	39	36	29	27	4	4	108	$p = .91$
32. The businessman is the person who contributes the most to our economic well-being.	I	2	1	28	21	66	49	34	25	4	3	134	$x^2 = 3.47$
	C	5	5	19	18	47	44	33	31	4	4	108	$p = .48$
33. It's too early to start thinking about my life's work.	I	1	1	6	4	5	4	58	43	64	48	134	$x^2 = 4.49$
	C	4	4	2	2	4	4	41	38	57	53	108	$p = .34$
34. It will be hard for me to find a good job.	I	8	6	49	37	24	18	43	32	10	7	134	$x^2 = .35$
	C	17	16	28	26	20	19	27	25	16	15	108	$p = .99$
35. I don't see any real need to start planning my career until after I have finished high school.	I	1	1	9	7	11	8	59	44	54	40	134	$x^2 = 4.57$
	C	4	4	6	6	5	5	43	40	50	46	108	$= .33$
36. The federal government should guarantee everyone a job.	I	18	13	33	25	27	20	39	29	17	13	134	$x^2 = 2.88$
	C	12	11	25	23	22	20	27	25	22	20	108	$p = .58$

		NUMBER AND PERCENTAGE OF RESPONSES												Test Statistics
		"Strongly Agree"		"Agree"		"Undecided"		"Disagree"		"Strongly Disagree"		TOTAL		
		No.	%	No.	%	No.	%	No.	%	No.	%	(N)		
37. Labor unions keep the employer from taking advantage of the worker.	I	22	16	82	61	21	16	8	6	1	1	134	X^2 = 2.03	
	C	22	20	66	61	12	11	6	6	2	2	108	p = .73	
38. Most people who are unemployed are shiftless and lazy.	I	8	6	29	22	17	13	58	43	22	16	134	X^2 = 3.42	
	C	11	10	26	24	10	9	39	36	22	20	108	p = .49	
39. The only reason most people work is for the money.	I	22	16	57	43	14	10	34	25	7	5	134	X^2 = 26.44	
	C	36	33	52	48	13	12	4	4	3	3	108	p = .00	
40. If necessary, I would go against my parents' wishes in selecting my future life's work.	I	42	32	59	44	24	18	5	4	3	2	134	X^2 = 3.42	
	C	42	39	45	42	12	18	6	4	3	2	108	p = .49	
41. "Taking it easy" on the job is all right as long as you don't get caught by the boss.	I	2	1	11	8	19	14	73	54	29	22	134	X^2 = 6.88	
	C	5	5	11	10	23	21	43	40	26	24	108	p = .14	
42. The proper objective of all economic activity should be to satisfy the wants of consumers.	I	17	13	83	62	26	19	8	6	0	0	134	X^2 = 8.10	
	C	8	7	59	55	31	29	7	6	3	3	108	p = .09	

Table 6-3.1 (cont.)

		NUMBER AND PERCENTAGE OF RESPONSES												Test Statistics
		"Strongly Agree"		"Agree"		"Undecided"		"Disagree"		"Strongly Disagree"		TOTAL		
		No.	%	No.	%	No.	%	No.	%	No.	%	No.		
43. Government employees generally aren't as efficient and hard-working as people who work for private business.	I	6	4	19	14	56	42	42	31	11	8	134		$X^2 = 4.11$
	C	8	7	21	19	39	36	27	25	13	12	108		p = .39
44. Luck will play an important role in determining whether I get a good job.	I	7	5	44	33	18	13	44	33	21	16	134		$X^2 = 3.10$
	C	9	8	27	25	17	16	41	38	14	13	108		p = .54
45. I would rather keep a poor job than move away from my relatives and friends to get a really good one.	I	2	1	9	7	22	16	59	44	42	31	134		$X^2 = 1.00$
	C	1	1	9	8	14	13	47	44	37	34	108		p = .91
46. Federal government activities in our economic system should be kept to a minimum.	I	8	6	46	34	59	44	19	14	2	1	134		$X^2 = 2.62$
	C	8	7	33	31	52	48	11	10	4	4	108		p = .62
47. High profits are necessary for the survival of our economic system.	I	5	4	41	31	40	30	43	32	5	4	134		$X^2 = 5.06$
	C	2	2	30	28	40	37	27	25	9	8	108		p = .28
48. Labor unions are the main cause of inflation.	I	5	4	16	12	62	46	48	36	3	2	134		$X^2 = 14.97$
	C	11	10	14	13	38	35	32	30	13	12	108		p = .01

Table 6-3.1 (cont.)

		NUMBER AND PERCENTAGE OF RESPONSES											
		"Strongly Agree"		"Agree"		"Undecided"		"Disagree"		"Strongly Disagree"		TOTAL	Test Statistics
		No.	%	No.	%	No.	%	No.	%	No.	%	(N)	
49. The major cause of inflation is high profits of business.	I	9	7	46	34	55	41	23	17	1	1	134	$x^2 = 3.84$
	C	11	10	28	26	46	43	20	19	3	3	108	p = .43
50. The more time you spend planning your career, the more successful you are likely to be.	I	22	16	65	49	20	15	25	19	2	1	134	$x^2 = 4.03$
	C	15	14	44	41	16	15	29	27	4	4	108	p = .40
51. Poverty will always be a serious problem for millions of families in the U.S.	I	23	17	71	53	14	10	25	19	1	1	134	$x^2 = 2.79$
	C	20	19	56	52	16	15	14	13	2	2	108	p = .59
52. Good working conditions on the job are more important than high pay.	I	20	15	56	42	38	28	18	13	2	1	134	$x^2 = 4.95$
	C	12	11	56	52	32	30	7	6	1	1	108	p = .29
53. Taxes are too high in the United States.	I	34	25	42	31	40	30	16	12	2	1	134	$x^2 = 3.43$
	C	35	32	38	35	23	21	10	9	2	2	108	p = .49
54. The worker is the person who contributes most to our economic well-being.	I	21	16	76	57	29	22	6	4	2	1	134	$x^2 = .93$
	C	17	16	57	53	16	24	7	6	1	1	108	p = .92

Table 6-3.1 (cont.)

		NUMBER AND PERCENTAGE OF RESPONSES											
		"Strongly Agree"		"Agree"		"Undecided"		"Disagree"		"Strongly Disagree"		TOTAL	Test Statistics
		No.	%	No.	%	No.	%	No.	%	No.	%	(N)	
55. It is better to direct your activities to immediate goals rather than planning and working toward goals which can't be achieved until the distant future.	I	10	7	32	24	27	20	57	43	8	6	134	$X^2 = 3.18$
	C	4	4	20	19	25	23	50	46	9	8	108	p = .53
56. Public schools in Ohio communities generally have enough money to provide a good education for all children.	I	7	5	43	32	26	19	36	27	22	16	134	$X^2 = 4.77$
	C	11	10	41	38	13	12	27	25	16	15	108	p = .31
57. Men ought to get higher pay than women even if both do exactly the same work.	I	7	5	11	8	10	7	47	35	59	44	134	$X^2 = 1.58$
	C	3	3	11	8	8	7	34	35	52	44	108	p = .81
58. Workers today don't take much pride in their work.	I	15	11	47	35	29	22	35	26	8	6	134	$X^2 = 1.47$
	C	16	15	41	38	19	18	27	25	5	5	108	p = .83
59. The main purpose of our economic system should be to satisfy the needs and wants of the American people.	I	39	29	68	51	19	14	8	6	0	0	134	$X^2 = 8.32$
	C	17	16	73	68	11	10	7	6	0	0	108	p = .04
60. Married women with children under 15 should not hold a job.	I	18	13	23	17	23	17	48	36	22	16	134	$X^2 = 4.33$
	C	18	17	28	26	16	15	29	27	17	16	108	p = .36

Table 6-3.1 (cont.)

		NUMBER AND PERCENTAGE OF RESPONSES												Test Statistics
		"Strongly Agree"		"Agree"		"Undecided"		"Disagree"		"Strongly Disagree"		TOTAL		
		No.	%	No.	%	No.	%	No.	%	No.	%	(N)		
61. People who really want to work can always find a job.	I	24	18	46	34	18	13	33	25	13	10	134		$x^2 = 4.51$
	C	30	28	37	34	9	8	24	22	8	7	108		$p = .34$
62. A worker who is a college graduate ought to be paid at least twice as much as a high school graduate.	I	3	2	12	9	27	20	68	51	24	18	134		$x^2 = 10.92$
	C	5	5	20	19	12	11	44	41	27	25	108		$p = .03$
63. I think my chances of getting a good job will be a lot better than my father had.	I	7	5	56	42	34	25	31	23	6	4	134		$x^2 = 7.31$
	C	14	13	31	29	31	29	27	25	5	5	108		$p = .12$
64. Young people need a lot more help in finding jobs than they are getting now.	I	29	22	70	52	16	12	18	13	1	1	134		$x^2 = 2.88$
	C	24	22	47	44	19	18	18	17	0	0	108		$p = .58$
65. The best jobs go to people who have connections and "pull."	I	22	16	49	37	29	22	32	24	2	1	134		$x^2 = 5.78$
	C	23	21	45	42	25	23	13	12	2	2	108		$p = .22$
66. Women ought to be able to rise just as high in the world as men.	I	45	34	55	41	19	14	13	10	2	1	134		$x^2 = 3.18$
	C	31	29	41	38	18	17	13	12	5	5	108		$p = .53$

Table 6-3.1 (cont.)

		NUMBER AND PERCENTAGE OF RESPONSES											
		"Strongly Agree"		"Agree"		"Undecided"		"Disagree"		"Strongly Disagree"		TOTAL	Test Statistics
		No.	%	No.	%	No.	%	No.	%	No.	%	(n)	
67. Industry today should give special preference in hiring and promotion to negro workers over white workers to make up for past discrimination.	I	3	2	9	7	26	20	58	44	37	28	134	$x^2 = 3.78$
	C	2	2	3	3	19	18	44	41	40	37	108	p = .44
68. I'll need a high school diploma in order to get a good job.	I	61	46	51	38	12	9	9	7	1	1	134	$x^2 = 2.24$
	C	53	49	42	39	7	6	4	4	2	2	108	p = .69
69. The government's national debt is getting so big that our country is in danger of going bankrupt.	I	8	6	16	12	71	53	31	23	8	6	134	$x^2 = 3.53$
	C	5	5	20	19	49	45	24	22	10	9	108	p = .47
70. The local office of the Ohio Bureau of Employment Services could probably help me find a good job.	I	9	7	70	52	32	24	14	10	9	7	134	$x^2 = 2.54$
	C	6	6	50	46	28	26	18	17	6	6	108	p = .64
71. Industry should hire high school graduates rather than dropouts.	I	22	16	43	32	40	30	26	19	3	2	134	$x^2 = 2.83$
	C	23	21	39	36	23	21	20	19	3	3	108	p = .59
72. Government economists contribute more to the economic well-being of our country than businessmen do.	I	0	0	9	7	85	63	35	26	5	4	134	$x^2 = 6.24$
	C	1	1	16	15	66	61	21	19	4	4	108	p = .18

Table 6-3.1 (cont.)

		NUMBER AND PERCENTAGE OF RESPONSES												Test Statistics
		"Strongly Agree"		"Agree"		"Undecided"		"Disagree"		"Strongly Disagree"		TOTAL		
		No.	%	No.	%	No.	%	No.	%	No.	%	(N)		
73. An understanding of economics would be very helpful to junior high school students in planning their careers.	I	37	28	61	46	24	18	10	7	2	1	134		$X^2 = 1.16$
	C	28	26	51	47	16	15	10	9	3	3	108		$p = .88$

strongly agreed with statement 18 which said, "If someone gave me all the money I needed, I'd never go to work." Also of interest is the fact that 24% of the control subjects as opposed to only 11% of the instructional subjects either agreed or strongly agreed that college graduates ought to be paid at least twice as much as high school graduates (statement 62).

Some additional evidence is available from the responses given to question E-4 on the SQ (see Appendix B-6). This was an open-ended question inquiring of the subjects what benefits they expected to receive from their work careers over the next twenty years. Although only about half of the ADI sample responded to the question, 29% of the control subjects compared to 15% of the instructionals mentioned only monetary benefits in their responses.

These results may suggest a partial explanation of the advantage held by control subjects in weekly take-home pay as reported in Section 8 below. It is possible that the instructional subjects may be sacrificing some financial benefits in order to obtain other personally satisfying rewards from the workplace.

One variable found to be meaningfully associated with the earnings dimension of early employment success (Section 8-2 below) is membership in a labor union. Although economists have debated the impact of unions on wages, it appears that in our sample subjects who were union members enjoyed a substantial hourly wage advantage over workers who did not belong to unions. If union membership does influence wage rates, as our sample indicates, then factors bearing on the decision to seek union membership will indirectly affect wages. Among the potential determinants of labor union membership are attitudes toward organized labor.

The SOMEAX instrument contained several statements reflecting attitudes about labor unions (items 3, 17, 37, 48). Attitudes of the ADI sample relative to organized labor were generally positive, but not overwhelmingly so. For example, more than 20% were either undecided or disagreed that "labor unions

deserve credit for improving the life of the working man" and "labor unions keep the employer from taking advantage of the worker," while about two-thirds were undecided or agreed that "labor unions are too strong today," and "labor unions are the main cause of inflation." Since there appeared to be significant variation among the subjects (though not meaningfully between instructional vs control groups as a whole) in their attitudes toward labor unions, we wished to determine if these attitudes, tested prior to entry into the world of work, were associated with eventual labor union membership -- and thus indirectly with wage rates.

SOMEAX responses were subjected to a type of factor analysis for the purpose of identifying groups of statements that would cluster into complex attitude dimensions.[9/] Among the clusters was one whose highest loaded elements were the four items on labor unions noted above. The relationships between

Table 6-3.2

Highest Loaded* (Correlated with the Factor) Items on Labor Union Sentiment Factor of a Principal Components Solution of SOMEAX Responses

Factor Loading	Item #	SOMEAX Statement
-.63159	(3)	Labor unions deserve credit for improving the life of the working man.
.57903	(17)	Labor unions are too strong today.
-.56038	(37)	Labor unions keep the employer from taking advantage of the worker.
.36865	(48)	Labor unions are the main cause of inflation.

* Items are included whose factor loading = |.30| or greater.

9/ Factor analysis is a generic term applied to a variety of techniques used to reduce a set of data (in the present study a set of responses to attitude statements related to the world of work) to a smaller set of underlying factors or components. The two primary methods of factor analysis are principal components and classical- or common-factor analysis. The principal components technique was used in this study. For a simple discussion of factor analysis see Chapter 17 in Norman Nie, et al, Statistical Package for the Social Sciences (New York: McGraw-Hill, 1970). A complete mathematical treatment is found in Harry Harman, Modern Factor Analysis (Chicago: University of Chicago Press, 1967). The computer program used to perform the analysis was provided by Colorado State University's Statistical Laboratory.

these items and the underlying attitude dimension, which we have interpreted as "Pro-Union Sentiment," are reported in Table 6-3.2. As part of the analysis a factor score was computed for each subject in the sample, reflecting his or her composite response to the underlying complex attitude. A high score on the factor indicates a positive attitude toward organized labor while a low score indicates negative feelings.

An analysis of variance was performed on the "Pro-Union Sentiment" factor to test whether this attitude was related to eventual membership in a labor union. Results are presented in Table 6-3.3. We may conclude that although the explained variance is relatively low (R^2 = .074), subjects who held positive attitudes toward labor unions as seniors in high school were significantly more likely to become labor union members than students who were less favorably disposed toward unions.

Table 6-3.3

Analysis of Variance: "Pro-Union Sentiment" by Membership in a Labor Union

Source of Variance	d.f.	Sum of Squares	Mean Squares	F Ratio	P
Between Groups (members vs. nonmembers)	1	6.2698	6.2698	9.066	.003
Within Groups	113	78.1482	.6916		
Total	114	84.4180			
R^2 = .074					

Scores on the "Pro-Union Sentiment" factor were also found to vary directly with wage rates. Again, although the correlation was low (r = .26), the computed coefficient was found to be significantly different from zero at p = .003.

6-4. Conclusion

Four years following MEE instruction, some differences in world-of-work attitudes, as measured by SOMEAX, still existed between the instructional and control groups. Many of the differences appear to be centered in the realm of pecuniary returns to work, with more of the control subjects viewing work in a purely income context, giving little or no recognition to its social and psychological aspects. This finding is advanced as possibly helping to explain a labor force difference between MEE treatment groups reported in Section 8 below, where control subjects are shown to have had higher take-home pay during the survey week than men and women in the instructional group.

Factor analysis of SOMEAX responses by subjects in the overall ADI sample (not partitioned on the basis of MEE treatment) showed that subjects having more positive feelings about unions had a higher incidence of union membership, which in turn (as shown in Section 8-2 below) led to higher hourly wages, than subjects who expressed less positive feelings about unions.

Although the strongly positive attitude of the instructional subjects toward the experimental MEE course had diminished somewhat over the four-year period, two-thirds of the instructional group still felt that the course would be a worthwhile part of the junior high school curriculum. Interestingly, more than one-third of the subjects who took the course indicated that it had influenced their behavior in some way, whether in school success, employment experience, career planning, or some other world-of-work-related fashion.

SECTION 7
MEASURED IMPACT OF THE COURSE ON EDUCATION-RELATED BEHAVIOR

Did students who were enrolled in the experimental MEE course as 8th graders (in 1967-68) behave differently from control students with respect to their education during their high school years and in the months following graduation? This is the general question we consider in Section 7.

7-1. Recapitulation of Short-run Impact

In addition to having a significant impact on student understanding and attitudes, it was hoped that the MEE course would also affect student behavior vis-a-vis schooling and other areas of their personal development, both in the short run and longer run. Early attempts at observing behavioral impact during and immediately following the experimental course were necessarily limited and informal. Teachers, guidance counselors, and principals commented that some students seemed more interested in school, had fewer absences, and showed improvement in their academic achievement; boys began to participate more actively in class discussion (previously dominated by girls); students talked with their parents about lessons in the course; class behavior and discipline improved in some classes; guidance counselors reported an increase in the number of inquiries about career opportunities; etc. In the experiment involving 10th graders, class attendance and participation were reported to be excellent, several students asked their teacher to help them get part-time jobs, and the anticipated dropout rate of 30%-40% (for this special group of 55 students identified as "potential dropouts") turned into an actual rate of 5.4%.[1/]

1/ By the end of the school year, only three students from this group had actually dropped out of school: one entered the armed forces, one obtained full-time employment, and one was sent to a correctional institution. All of the above discussion is based on Final Report, pp. 33f.

7-2. Longer-run Impact

What happened to this cohort of students between January 1968 (when they were 8th graders) and February 1973, some eight months after high school graduation? As reported in Section 3 above, 193 of the students moved away from Lancaster, dropped out of school, or for some other reason failed to appear on the 1971-72 senior class list of Lancaster High School. Varying amounts of data exist for the remaining 440 or so, including our ADI sample of 242; and it is on this ADI group that we shall focus in discussing some patterns of behavior relating to education.

Table 7-2.1 reports the status of the 134 instructional and 108 control subjects as of the survey week, February 5-11, 1973. About one-third of the

Table 7-2.1

Labor Force Status During Survey Week,
Instructional vs Control (ADI)*

Labor Force Status as of Survey Week	Combined Total		Instructional		Control		Test Statistics
	No.	%	No.	%	No.	%	
Armed Forces	11	5	6	4	5	6	$X^2 = 1.6234$
Full-time students	95	39	49	37	46	43	df = 2
College (2- and 4-year)	(84)	(35)	(43)	(32)	(41)	(38)	
Other**	(11)	(4)	(6)	(5)	(5)	(5)	
Employed & Other (E&O)***	136	56	79	59	57	51	p = .4705
Total	242	100	134	100	108	100	

* Survey week was February 5-11, 1973 -- eight months following high school graduation.

** Enrollment in vocational-technical programs, private business, or trade schools, etc.

*** Includes civilian subjects (except full-time students) working full-time, working part-time, unemployed but looking for work, and those not in the labor force.

ADI subjects (I + C) were enrolled as full-time students in 2- or 4-year colleges and universities during the survey week.[2/] The table shows that the rate for control subjects was slightly higher than for instructional, though college enrollment rates for both groups were below the national figure of 46% reported for the high school class of 1972.[3/] Control subjects classified as full-time students were also found to have a somewhat higher employment rate, with four out of 10 holding jobs during the survey week compared to three out of 10 instructional subjects.

Table 7-2.2(B) shows that of the ADI subjects who were not full-time students in the survey week, approximately the same percentage of instructional and control (≈15%) were enrolled in some type of post-secondary education or training program during the survey week. About 25% of each group in the non-student category reported that they had been enrolled in an educational program sometime between June 1972 and February 4, 1973. Although the differences are not statistically significant, a somewhat larger percentage of control subjects indicated that they intended to continue their education at some time in the future. However, a significantly ($p=.07$) larger proportion of the instructional students who indicated plans for continuing their education expressed the intention to do so on a full-time rather than part-time basis.

Behavioral patterns of the two groups were studied to determine whether any significant differences could be observed during their three years of

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2/ Six instructional and five control subjects were enrolled as full-time students in vocational schools, business colleges or trade schools, or other training programs.

3/ See Anne M. Young, "The High School Class of 1972: More at Work, Fewer in College," Monthly Labor Review, Vol. 96, No. 6 (June, 1973) p. 27.

senior high school. Table 7-2.3 on pp. 86-87 summarizes some of the findings.

In terms of curriculum choice there were no large differences between the groups, although the control students chose a vocational curriculum slightly more often than did the instructional group. Significant differences (p=.03) in class

Table 7-2.2

Education-Related Indicators of 'Employed and Other' Subjects, Instructional vs Control (ADI)

	Indicator	Instructional		Control		Test Statistics
		No.	%	No.	%	
A.	E&O Subjects who Contined Education/Training, June '72 - Feb. '73					X^2 = .655
	Yes	15	21	14	27	df = 1
	No	56	79	37	73	
	Total	71	100	51	100	p = .4183
B.	E&O Subjects in Part-time Education/Training During Survey Week					X^2 = .381
	Yes	10	13	9	17	df = 1
	No	65	87	43	83	
	Total	75	100	52	100	p = .5369
C.	E&O Subjects Planning Further Education (as of Survey Week)					X^2 = .891
	Yes	28	43	23	52	df = 1
	No	37	57	21	48	
	Total	65	100	44	100	p = .3452
D.	Type of Plans for Future Education, E&O Subjects					X^2 = 3.259
	Full-time	11	50	4	22	df = 1
	Part-time	11	50	14	78	
	Total	22	100	18	100	p = .0710

rank, as indicated by the chi-square statistic, are difficult to interpret. The two groups were equally represented in the top quintile; instructional students were overrepresented in the lowest quintile; and the control students were underrepresented in the next to highest quintile.

Teacher ratings of personal traits (data available only for grade 12) were almost identical for the instructional and control groups, although the control students were rated somewhat higher on "industry" and "leadership."

Table 7-2.3

Selected Measures of Education-Related Behavior, Instructional vs Control (ADI)

		Instructional		Control		Test Statistics
		No.	%	No.	%	
A.	High School Curriculum Choice					
	Vocational	42	31	39	38	
	College Prep	73	54	54	52	$X^2 = 2.004$
	General	15	11	10	10	df = 3
	Other	4	3	1	1	p = .5716
	No Response	--	--	4	--	
	Total	134	100	108	100	
B.	Class Rank at Graduation					
	Highest Quintile	31	23	26	24	
	Second Quintile	31	23	19	18	$X^2 = 10.565$
	Third Quintile	29	22	30	28	df = 4
	Fourth Quintile	17	13	25	23	p = .0319
	Lowest Quintile	24	18	8	7	
	No Response	2	--	--	--	
	Total	134	100	108	100	
C.	Extra-Curricular Activities					
	None	39	29	24	23	$X^2 = 4.126$
	One to three	43	32	28	26	df = 2
	More than three	51	38	56	51	p = .1271
	No Response	1	--	--	--	
	Total	134	100	108	100	
D.	Contacts for Career Planning*					
	Parents	97	44	72	46	
	School Counselor	49	22	27	17	
	Local Employment Office	15	7	11	7	Not
	Armed Forces Recruiter	6	3	5	3	Applicable
	Other (Jr. Achiev't., etc.)	39	18	27	17	
	No Contact Reported	16	7	14	9	
	Total Contacts	222	100	156	100	
E.	Teacher Ratings on Personal Traits Valued by Employers**					
	1. Dependability					
	Above Average	72	55	62	58	
	Average	36	27	30	28	$X^2 = 2.010$
	Satisfactory	17	13	13	12	df = 3
	Below Average	7	5	2	2	p = .5704
	Total	132	100	107	100	
	2. Industry					
	Above Average	27	21	34	32	
	Average	59	45	49	46	$X^2 = 5.775$
	Satisfactory	18	14	10	9	df = 3
	Below Average	27	21	14	13	p = .1231
	Total	131	100	107	100	
	3. Initiative					
	Above Average	38	29	35	33	
	Average	49	38	43	40	$X^2 = 1.426$
	Satisfactory	15	12	8	7	df = 3
	Below Average	28	22	21	20	p = .6994
	Total	130	100	107	100	

Table 7-2.3 (cont.)

		Instructional		Control		Test Statistics
		No.	%	No.	%	
F.	Teacher Ratings on Personal Traits Valued by Co-Workers**					
	1. Cooperation					
	Above Average	57	43	52	49	
	Average	33	25	21	20	$X^2 = 2.387$
	Satisfactory	42	32	33	31	df = 3
	Below Average	0	0	1	1	p = .4960
	Total	132	100	107	100	
	2. Self-Control					
	Above Average	73	55	52	49	
	Average	40	30	40	37	$X^2 = 2.778$
	Satisfactory	15	11	14	13	df = 3
	Below Average	4	3	1	1	p = .4272
	Total	132	100	107	100	
	3. Social Adjustment					
	Above Average	44	34	42	39	
	Average	45	34	37	35	$X^2 = 1.263$
	Satisfactory	13	10	8	7	df = 3
	Below Average	29	22	20	19	p = .7379
	Total	131	100	107	100	
G.	Teacher Ratings on Leadership					
	Above Average	48	37	45	42	
	Average	53	41	53	50	$X^2 = 10.910$
	Satisfactory	15	12	2	2	df = 3
	Below Average	14	11	6	6	p = .0122
	Total	130	100	106	100	

*Students were instructed to mark as many contacts as applied. In the percentage calculations, two contacts by a single student are weighted the same as two students making one contact each.

**Characterization and grouping of traits vis-a-vis employer and co-worker orientation done by research staff.

With respect to participation in vocationally-oriented extracurricular activities (e.g., Future Business Leaders of America, Future Teachers of America), the control students indicated a slightly higher frequency of involvement. There were no differences in frequency or types of student activities relative to career planning.

Records of school attendance in grades 9, 10, 11, and 12 were checked for instructional vs control subjects with the finding that no significant differences existed (data not shown in table).

7-3. Dropouts

Of the 645 students enrolled as eighth graders in Lancaster's three junior high schools in 1967-68, 72 students were personally identified by school officials (in 1973) as dropouts. Of this number, 32 were in the instructional group during the MEE experiment, 36 were control, and the treatment status of 4 students was unknown. Using these data an "internal dropout rate" of 13.7% is indicated over a period of five school years (grade 8 through 12).[1/] The 11.9% adjusted dropout rate for instructional students was not significantly lower than the 14.1% rate for control students.[2/]

Table 7-3.1 compares the dropout sample (n=68) with the ADI sample of 1972 graduates from Lancaster High School (n=242) in terms of 11 selected characteristics. Females slightly outnumbered males for both groups, and all but one of the subjects were white. Mean mental ability score of the dropouts was 82.6 compared with 106.3 for the graduate sample, a factor that almost certainly had a major influence on the decision to leave school prior to completion of the 12th grade. As a group, the dropouts were significantly older, with 52% of the dropouts reporting birthdates before October 1953 compared with only 8% of the graduates. This means that more than half the dropouts were 14 years or older when the MEE experiment began, while 9 out of 10 future graduates were 13 years or younger. Being "over age" (whether because of late school entry or failure

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1/ This "internal dropout rate" excludes from the population 121 students who transferred out of the Lancaster school system or for some other reason were removed from the 1972 senior class. Subtracting 121 from the original population (N=645) equals 524, which divided into 72 yields the 13.7% figure.

2/ These rates were calculated by first allocating the 4 subjects with unknown treatment status proportionately (in this case equally) between instructional and control students; allocating the difference between population size (n=645) and original sample size (n=634) proportionally between treatment groups; reducing the population by 121, and dividing the number of dropouts by the appropriate adjusted population base (I*=268, C*=256). While the mean IQ of dropouts was much lower than nondropouts, there was no significant difference in IQ's between instructional students and control students within the dropout category (see Appendix A-1).

Table 7-3.1

Selected Characteristics of High School Graduates* vs Dropouts, Experimental Cohort

	Indicators	Graduates n=242*		Dropouts n=68**		Test Statistics
		No.	%	No.	%	
A.	Sex					
	Female	124	51	35	51	$X^2 = 0.030$
	Male	118	49	33	49	df = 1
	Total	242	100%	68	100	p = 0.8500
B.	Race					
	White	241	99	62	100	
	Non-White	1	1	--	--	(Superfluous)
	No Response	--	--	6	--	
	Total	242	100%	68	100%	
C.	Mental Ability (Converted IQ's)					
	$\bar{X}$	106.33		82.64		$\bar{X}_g - \bar{X}_d = 23.69$
	S_x	13.14		14.40		t = 12.34
	n	242		60		p .001
D.	Birthdate					
	Between 10/1953 and 9/1954	201	83	31	47	$X^2 = 68.021$
	Before 10/1953	20	8	34	52	df = 2
	After 9/1954	21	9	1	1	p = 0.0050
	No Response	--	--	2	--	
	Total	242	100%	68	100%	
E.	Junior High School Attended					
	Ewing	80	33	13	20	$X^2 = 4.478$
	General Sherman	83	34	26	39	df = 2
	Stanbery	79	33	27	41	p = 0.2500
	No Response	--	--	2	--	
	Total	242	100%	68	100%	
F.	Family Income in 1966					
	Less than $4,000	8	3	4	7	
	$4,000 - $6,000	73	31	29	51	$X^2 = 13.060$
	$6,000 - $10,000	100	42	20	35	df = 3
	Greater than $10,000	57	24	4	7	p = 0.0050
	No Response	4	--	11	--	
	Total	242	100%	68	100%	
G.	Living Arrangement in 1967-68					
	Both parents	216	89	42	75	
	Father only	26	11	6	11	$X^2 = 7.943$
	Mother only			4	7	df = 1
	Other			4	7	p = 0.0050
	No Response	--	--	12	--	
	Total	242	100%	68	100%	

Table 7-3.1

	Indicators	Graduates n=242*		Dropouts n=68**		Test Statistics
		No.	%	No.	%	
H.	Education of Father					
	Less than 8 years	4	2	6	11	
	8 years	21	9	9	16	
	9-11 years	38	16	18	33	$X^2 = 32.182$
	12 years	100	43	20	36	df = 5
	Some college	33	14	1	2	p = 0.0050
	Four or more years of college	37	16	1	2	
	No Response	9	--	13	--	
	Total	242	100%	68	100%	
I.	Education of Mother					
	Less than 8 years	3	1	2	4	
	8 years	10	4	9	16	$X^2 = 35.167$
	9-11 years	41	18	23	41	df = 5
	12 years	129	55	21	38	p = 0.0050
	Some college	34	15	1	1	
	Four or more years of college	17	7	--	--	
	No Response	8	--	12	--	
	Total	242	100%	68	100%	
J.	Occupation of Father					
	Professional and technical	44	21	1	2	
	Managers, officials, proprietors	37	17	1	2	
	Clerical workers	7	3	4	8	$X^2 = 51.026$
	Sales worker	14	7	2	4	df = 9
	Service workers	14	7	3	6	p = 0.0050
	Craftsmen and foremen	53	25	12	23	
	Semi-skilled operatives	45	21	23	43	
	Unskilled workers	--	--	5	9	
	Farmers and farm managers	--	--	1	2	
	Farm laborers and foremen	--	--	1	2	
	No Response	28	--	15	--	
	Total	242	100%	68	100%	
K.	Occupation of Mother					
	Professional and technical	14	10	--	--	
	Managers, officials, and proprietors	4	3	1	2	
	Clerical workers	27	19	4	9	$X^2 = 17.5863$
	Sales workers	3	2	1	2	df = 8
	Service workers	27	19	7	15	p = 0.0250
	Craftsmen and foremen	2	1	--	--	
	Semi-skilled operatives	18	13	6	13	
	Unskilled workers	3	2	5	11	
	Housewives	43	31	23	48	
	No Response	101	--	21	--	
	Total	242	100%	68	100%	

* ADI sample, including both instructional and control subjects.

** Seventy-two students from the 1967-68 eighth-grade class in Lancaster's three junior high schools were identified by school officials as dropouts. Data are reported here for the subset of 68 subjects whose MEE treatment status is known. (I=32, C=36).

to receive regular grade-level promotion) may be another factor contributing to the decision to drop out of school.[3/]

As Table 7-3.1(E) shows, although students attending Ewing Junior High accounted for one-third of the graduates, they made up only one-fifth of the dropouts. This underrepresentation presumably reflects the higher socioeconomic status of families which in fact characterizes the Ewing district. Highly significant differences between graduates ("G-group") and dropouts existed vis-a-vis 1966 family income, parental living arrangements, education of parents, and occupation of parents. Dropouts were concentrated in the below-$6,000 income class and notably underrepresented in the highest income class (above-$10,000). Only 75% of the dropouts came from homes with both parents present in 1967-68 compared with 89% for the G-group. Three out of five dropouts had fathers with less than 12 years of schooling in contrast to the G-group proportion of one out of four, with even larger disparities revealed in "Education of Mother." Within the G-group, 38% of the fathers were professional and technical workers or managers, officials, proprietors; while only 4% of the dropouts' fathers were in these occupational categories. More than half of the dropouts had fathers who were semi-skilled or unskilled blue-collar workers compared with one out of five of the G-group fathers. A much higher percentage of G-group mothers were in white-collar occupations, and nearly twice as many mothers of dropouts were reported to be unskilled workers or housewives.

Table 7-3.2 compares 1967 (pre) and 1968 (post) METU scores for instructional vs control students within the dropout group and also for instructional dropout students vs instructional G-group students. Instructional dropouts recorded a

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3/ School records and interviews with counselors disclosed a variety of factors contributing to dropping out: e.g., pregnancy, delinquency, broken home, limited mental ability, drugs, etc. See Appendix A-4(a).

Table 7-3.2

Pre and Post METU Scores for Dropouts and Graduates by MEE Treatment

	Dropouts		Graduates (ADI)	
Observation	1967 METU	1968 METU	1967 METU	1968 METU
Instructional	$\bar{X}$ = 12.16 S_x = 3.14 n = 31	$\bar{X}$ = 16.77 S_x = 5.91 n = 26	$\bar{X}$ = 16.28 S_x = 5.01 n = 134	$\bar{X}$ = 23.03 S_x = 6.45 n = 134
Control	$\bar{X}$ = 12.18 S_x = 3.53 n = 34	$\bar{X}$ = 12.39 S_x = 4.01 n = 33	$\bar{X}$ = 15.47 S_x = 4.74 n = 108	$\bar{X}$ = 17.00 S_x = 4.31 n = 108
Instructional vs Control	$\bar{X}_I - \bar{X}_C = 0.02$ t = 0.024 Sign. at p = 0.99	$\bar{X}_I - \bar{X}_C = -4.38$ t = 3.395 Sign. at p < 0.001		

$\bar{X}_{DI_{1967}} - \bar{X}_{GI_{1967}} = -4.10$ t = 4.510 Significant at p < 0.001	$\bar{X}_{DC_{1967}} - \bar{X}_{GC_{1967}} = -3.31$ t = 3.662 Significant at p < 0.001
$\bar{X}_{DI_{1968}} - \bar{X}_{GI_{1968}} = -10.64$ t = 9.094 Significant at p < 0.001	$\bar{X}_{DC_{1968}} - \bar{X}_{GC_{1968}} = -0.23$ t = 0.225 Significant at p = 0.8500

gain of 4.6 points (38%) during the semester they were enrolled in the experimental MEE course, while the control dropouts registered no significant gain. However, by the end of the course, the instructional dropouts had raised their scores to a level only slightly above the starting point of the instructional graduates, who in turn had increased their mean score by nearly 7 points (41% gain) to 23.03. In summary, the instructional group of dropouts did benefit from the MEE course in terms of increasing their world-of-work understanding (and gaining an advantage over their control counterparts); but their 1968 scores were far below the post-course mean score of the sample of graduates. It could be conjectured that the lower level of manpower understanding of the dropouts contributed somewhat to their leaving school before graduation and that differences in world-of-work understanding between instructional and control dropouts affected their respective dropout rates. Obviously, however, there were other more powerful factors involved in the decision to drop out of school.

The Lancaster school staff succeeded in contacting 49 of the 72 dropouts, and useful information was obtained from 44 on labor force status, occupational distribution, and earnings. Because of the small sample size plus a difference in time frames, these data must be regarded as illustrative and not statistically significant.[4/]

Dropouts in our follow-up sample (n=44) were reported to be in the armed forces, not in the labor force, or unemployed at higher rates than members of the cohort who graduated. Of the 36 subjects comprising the noninstitutional civilian population component of the dropout sample, only one was enrolled in an

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4/ A combination of circumstances prevented us from obtaining information on dropouts as of the February 1973 survey week; and in fact, interviews were not conducted until January 1974. However, according to the school staff, the status of these 44 subjects was approximately the same at both points in time. Data on timing and reasons for dropping out of school and on labor force status are given in Appendix A-4.

educational program and 15, or 42%, were not in the labor force. All but one of these nonparticipants were female, most of them married with children. There was not a single white-collar worker among the 17 employed and only one skilled blue-collar worker. Nearly three-fourths of the employed dropouts had semi-skilled or unskilled blue-collar jobs compared with half of the employed graduates. Hourly wages and weekly take-home pay were slightly higher for the dropouts than the graduates, reflecting not only the difference in survey week but also their greater work experience and longer work week.

7-4. Conclusions

On the basis of these observations, we conclude that there were few if any significant differences in the longer-run education-related behavior of instructional vs control subjects during the five-year period immediately following the experimental Manpower and Economic Education course. Dropout rates -- which are remarkably low for the Lancaster school system as a whole -- did not differ significantly between instructional and control subjects. There were highly significant differences between subjects who graduated (total ADI sample, including both instructional and control groups) vs the dropout sample in terms of IQ, age (but not sex), family income, living arrangements, education and occupation of parents, and METJ scores.

SECTION 8
MEASURED IMPACT OF THE COURSE ON LABOR FORCE BEHAVIOR

It is human capital rather than native ability, influence, or credentials that is most widely acknowledged to be the "ticket" to labor force success, or the "bridge" that can carry a young man or woman across the gap from school to work, leading toward successful career development. This "capital stock" exists in the form of knowledge (including world-of-work understanding), skills (both job skills and job-search skills), health, mobility, and functional attitudes and attributes (including personality). How to measure human capital and what weights to assign to various forms (e.g., job skills vs functional attitudes, or even job skills vs job-search skills) are tasks that have proved difficult for scholars in the field of human resources. As suggested in Section 1, surprisingly little is known "for sure" about human resource development and career success.

In the present investigation, attempts have been made to obtain and analyze data that might help explain the transition from school to work. This involves (1) selection of criteria indicating early employment success and (2) identification of factors that influence such success.

8-1. Indicators of Early Employment Success

Like Parnes and Kohen (and others), we define job success in terms of quantity and quality of employment as measured by: (1) labor force status; (2) rate of pay; (3) occupational status; and (4) work satisfaction.[1/] Data from mail questionnaires are available on all four measures as of the survey week (February 5-11, 1973) and for the 8-month period between high school graduation (June 1972) and the survey week. Data on rate of pay are available in terms

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1/ We believe there may also be a fifth dimension -- related to the perceived contribution that work/employment/career can make to personal fulfillment -- and are exploring ways to measure this aspect of the quality of employment.

of hourly earnings, take-home pay for the survey week, and expected annual earnings. Information on labor force status includes employment and unemployment history and labor force participation.

Table 8-1.1 reports the labor force status of "Employed and Other" (E&O) subset of the ADI sample during the survey week based on LFQ responses.[2/] Both the instructional and control groups showed unemployment rates (≈5%) considerably below the national figure of 13.5% for 18 and 19 year-olds during February 1973.[3/] Of the 13% classified as not in the labor force, the nonparticipation rate was slightly (but not significantly) higher for the control group. All 18 nonparticipants were female and 10 were married. Most of these women indicated they were "unable to work" or "not interested in outside employment" because of family responsibilities; only one subject was unable to work for health reasons. The distribution of full-time and part-time workers was roughly equal for the two groups.

From the employment history section of the LFQ, data were obtained (see Appendix A-5) on the cumulative "quantity of employment" for the instructional and control groups. Two-thirds of each group reported a total of more than six months of employment during the 8-month period between June 1, 1972, and February 11, 1973. Only about 15% of each group reported less than four months of employment during the period. There were no significant differences between groups on any of the questions in this section dealing with employment and unemployment. It would appear that the entire E&O subset of the ADI sample (which admittedly may be biased) had a minimum of difficulty in making a relatively quick transition from school to work.

Five qualitative indicators of job success are summarized in Table 8-1.2. Hourly earnings were somewhat higher for control subjects, with 31% reporting wages above $3 per hour compared with 18% of the instructional group. Median

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[2/] Labor force status of dropouts was reported in Section 7-3 above.

[3/] Marie M. Young, "The High School Class of 1972...," loc. cit.

Table 8-1.1

Labor Force Status of 'Employed and Other' Subset of ADI Sample (n=136) During Survey Week (Feb. 5-11, 1973) By Instructional and Control Groups*

LABOR FORCE STATUS	Instructional		Control		Total	
	number	per cent	number	per cent	number	per cent
Employed	66	84%	46	81%	112	82%
Full-time	(55)	(70%)	(41)	(72%)	(96)	(70%)
Part-time	(11)	(14%)	(5)	(9%)	(16)	(12%)
Unemployed--looking for work	4	5%**	2	4%**	6	5%**
Not in the labor force	9	11%	9	16%	18	13%
Totals	79	100%	57	100%	136	100%

*"Employed and Other" (E&O) subset excludes persons in the armed forces and full-time students. See Table 7-2.1 above for status report on the entire ADI sample.

**These figures are not unemployment rates. UR's are computed by dividing the number of Unemployed by the sum of the Employed plus Unemployed. In the survey week, the UR for instructional subjects was 5.7%; for control, 4.2%; and for both groups combined, 5.1%.

Table 8-1.2

Qualitative Indicators of Job Success During Survey Week, Instructional vs Control (ADI, n=136)

		Instructional		Control		Test Statistics
		No.	%	No.	%	
A.	Hourly Rate of Pay During Survey Week					
	Less than $1.60/hour	5	8	3	7	
	$1.60 to $2.00/hour	26	41	12	27	
	$2.01 to $2.50/hour	12	19	8	18	$X^2 = 4.554$
	$2.51 to $3.00/hour	10	16	8	18	df = 5
	$3.01 to $4.00/hour	10	16	11	24	p = .4727
	More than $4.00/hour	1	2	3	7	
	Not Empld. & No Response	15	-	12	-	
	Total	79	100	57	100	
B.	Take-Home Pay During Survey Week					
	Less than $20	0	0	1	3	
	$20 to $39	2	5	0	0	
	$40 to $59	12	28	0	0	$X^2 = 16.188$
	$60 to $79	11	26	6	19	df = 5
	$80 to $100	8	19	13	42	p = .0063
	More than $100	10	23	11	35	
	Not Empld. & No Response	36	-	26	-	
	Total	79	100	57	100	
C.	Total Expected Income for 1973					
	Less than $2,000	3	7	2	6	
	$2,000 to $2,999	9	21	3	10	
	$3,000 to $3,999	12	28	6	19	
	$4,000 to $4,999	8	19	6	19	$X^2 = 5.621$
	$5,000 to $5,999	3	7	7	23	df = 7
	$6,000 to $7,499	5	12	5	16	p = .5846
	$7,500 to $10,000	2	5	1	3	
	More than $10,000	1	2	1	3	
	Not Empld. & No Response	36	-	26	-	
	Total	79	100	57	100	
D.	Occupational Status					
	Professional & Technical	2	3	1	2	
	Managers, Officials, & Proprietors	0	0	2	5	
	Clerical & Sales	24	39	10	23	$X^2 = 7.790$
	Service Workers	7	11	7	16	df = 5
	Craftsmen & Foremen	2	3	2	5	p = .2578
	Operatives	16	25	8	18	
	Laborers	12	19	14	32	
	Not Empld. & No Response	16	-	13	-	
	Total	79	100	57	100	

continued on next page

Table 8-1.2 (cont.)

		Instructional		Control		Test Statistics
		No.	%	No.	%	
E.	Degree of Satisfaction with Job Held During Survey Week					
	Very Satisfied, Enjoying Work	26	47	16	40	
	Reasonably Satisfied	14	25	13	32	
	Not Paid Enough for Amount of Work Done	7	13	2	5	$X^2 = 3.515$
	Finds Job Boring	4	7	6	15	df = 5
	Sees No Hope for Advancement	1	2	1	2	p = .6211
	Other	3	5	2	5	
	Not Empld. & No Response	24	-	17	-	
	Total	79	100	57	100	

for each group was between $2.01 and $2.50 per hour, with 27 subjects failing to respond.[4/]

Nonresponse rates were even higher (50%) for the other two questions (Table 8-1.2, B & C) dealing with rates of pay, which seriously diminishes the reliability of the data. However, a statistically significant advantage was observed for the control group in total take-home pay from all jobs held during the survey week. Control subjects were somewhat more sanguine about their anticipated income for the entire year (1973), but differences between the groups were not statistically significant.

The occupational distribution of employed instructional and control subjects during the survey week was somewhat dissimilar, the control subjects being more highly represented in the Laborers category, with instructional subjects concentrated in the Clerical-Sales and the Operatives groupings. The chi-square statistic, however, indicates that these differences are not significant.

4/ An estimated mean of $2.41 was calculated using class midpoints (n = 109).

Finally, Table 8-1.2 shows that the degree of satisfaction with the job held during the survey week was quite high and nearly identical for the two groups.

Conclusions. Based on the indicators of early job/career success reported in this section, there appear to be no large differences between instructional and control groups. By national standards, both groups seemed to be enjoying success in terms of low unemployment, adequate earnings and occupational status, and fairly high levels of work satisfaction.[5/]

8-2. Factors Contributing to Early Employment Success

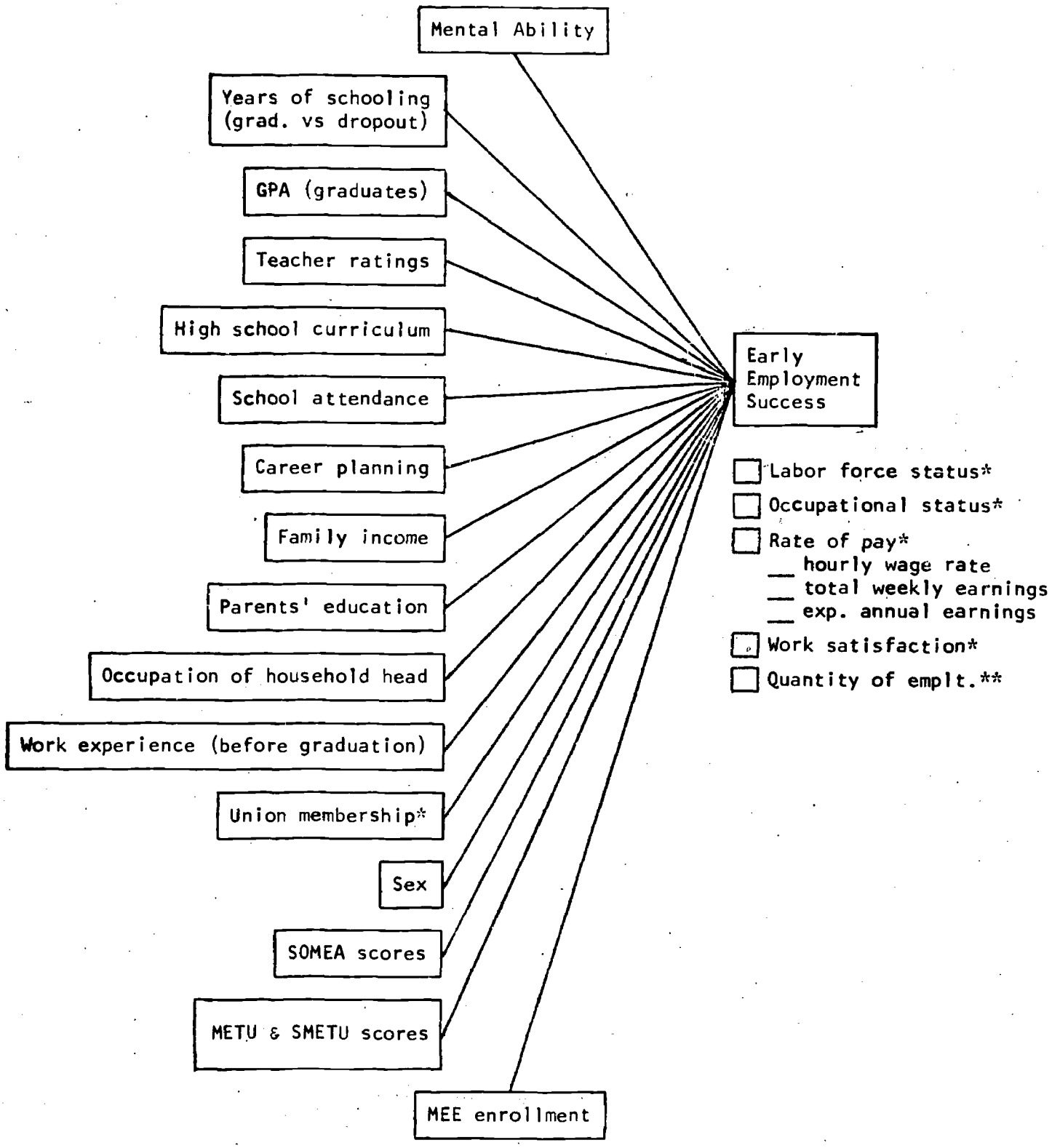
In this section we come to the heart of the investigation, expressable in the form of two questions: (1) What influence, if any, did enrollment in the experimental MEE course have on early job success? and (2) Aside from MEE enrollment, what factors contributed to early job success? The TSW Schematic on the following page indicates a number of factors that we have considered in this study, ranging from mental ability and family background to enrollment in the experimental MEE course.

The MEE course may be considered an element in the "quality" of education, i.e., a variation in the educational production function in the form of an innovative curriculum. Except for school dropouts, for whom we have only limited labor force data, all of the subjects in our sample have the same quantity of schooling -- 12 years, as of June 1972 -- which is a factor identified as a major determinant of employment success.[6/]

5/ We recognize the possibility of a biased response: unemployed, low paid, dissatisfied workers may have been less inclined to complete and return the "Follow-up Study" questionnaires (LFQ's).

6/ Andrew I. Kohen, in his recent study at Ohio State University, found that "the number of years of school completed /was/ by far the strongest direct determinant of early labor market success among young men." He obtained no definitive results with respect to quality of schooling measured in terms of school facilities and expenditures per pupil, and observed that "there is little consensus about the methods of measuring quality." Determinants of Early Labor Market Success Among Young Men: Race, Ability, Quantity and Quality of Schooling (Columbus: Center for Human Resource Research, Ohio State University, January 1973), pp. 48-56, 145.

TSW Schematic



* During survey week

**From H.S. graduation to survey week

What we find in our analysis of the Lancaster data is that a qualitative variation of curriculum at the 8th grade level, viz., the experimental MEE course, produced a significant increase in world-of-work understanding -- the instructional students learned in 4½ months what it may have taken the control students 4½ years to learn from random sources -- but apparently did not directly or indirectly produce significant differential effects in the labor market during the first eight months following graduation from high school. In essence, this answers the first question posed above and suggests negation of the major working hypothesis of the study, viz., that enrollment in the MEE course is an important determinant of labor force status some eight months following graduation from high school.

With respect to the second question -- what factors, apart from MEE enrollment, might contribute to early job success? -- the answer, with two exceptions, is not unlike the finding just reported. To our surprise, we discovered that none of the following factors (based on our sample data) is significantly associated with early labor force success: IQ, academic achievement (as measured by class rank), teacher ratings of personal traits, curriculum choice (vocational, college preparatory, general),[7] school attendance record, career planning activity, family income, parents' educational attainment, occupation of household head, work experience before graduation, or world-of-work knowledge (as measured by METU and SMETU scores).[8] Reflecting the national pattern, employed males did have a significant hourly wage advantage over employed

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[7] Hourly wages of subjects who completed a vocational curriculum ($\bar{X}$=$2.58, n=51) were about 25¢ higher than graduates from the general curriculum ($\bar{X}$=$2.32, n=18) and college preparatory curriculum ($\bar{X}$=$2.29, n=32). The differences were significant only at p=.26. As reported in Section 7-2, a slightly larger proportion of control subjects were in the vocational curriculum than instructional students, which contributed to the wage advantage the control group enjoyed over the instructional group (Table 8-1.2).

[8] Data relative to all of these variables are included in the report; however, in the case of 8 of the 16 predictor variables listed on the TSW Schematic, no statistics are shown vis-a-vis indicators of early employment success. Appendix A-6 shows correlation coefficients for IQ and hourly earnings.

females.[9] The other exception to the general pattern of negative findings is the discovery that membership in a labor union is significantly associated with higher earnings. Table 8-2.1 shows that the 32 subjects identified as labor union members during the survey week for whom we had wage data enjoyed an hourly wage advantage of nearly one dollar over the 59 nonunion members for whom we had wage data. While 61% of the sample of non-union-members had hourly wages of $2 or below, only one union member was working for $2 or less per hour. Nearly half the sample of union members reported over $100 of weekly take-home pay compared with only 12% of the nonmembers. While only 7% of the nonmember sample expected to earn $6,000 or more in 1973, 44% of union members anticipated earnings of that amount. Nine of the union members (39%) reported that their first job after graduation from high school paid more than $2.50 per hour compared with only five nonmembers (10%). With respect to work satisfaction (not shown in table), nonmembers expresssed slightly higher satisfaction, but differences were not significant below the p=.29 level.

These data suggest that one factor over which young workers sometimes have control (in contrast to one's sex, for example) that may contribute to early job success is labor union membership. As suggested in Section 6-3 above, a person's attitude vis-a-vis organized labor may influence his decision to join or not join a union; and whatever factors (including school curriculum) that influence a young person's attitude about unions may therefore affect early job success. It was also observed that no meaningfully significant differences existed between instructional and control groups relative to the attitudes they expressed about unions on the SOMEAX instrument. However, attitudes of instructional students at the end of the experimental MEE course were more favorable to unions on all four SOMEA items dealing with organized labor than they were in the pre-test.[10]

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[9] See Appendix A-7; time and resource constraints prevented us from further analysis of this variable.

[10] Final Report, pp. 23-31.

Table 8-2.1(a)

Pay Differentials Between Union Members and Nonmembers (ADI)

		LFO/W Respondents (n=116)*				Test Statistics
		Union Members		Non Members		
		No.	%	No.	%	
A.	Hourly Wages (survey week)					
	Less than $1.60/hour	--	--	5	8	
	$1.60 - $2.00	1	3	31	53	$X^2 = 38.3624$
	$2.01 - $2.50	5	16	12	20	df = 5
	$2.51 - $3.00	11	34	5	8	
	$3.01 - $4.00	13	41	4	7	$p < 0.001$
	Greater than $4.00	2	6	2	4	
	No Response	2	--	23	--	
	Total	34	100%	82	100%	
B.	Take-Home Pay (survey week)					
	Less than $20	--	--	1	2	
	$20 - $39	--	--	1	2	$X^2 = 17.4572$
	$40 - $59	--	--	11	26	
	$60 - $79	4	16	13	30	df = 5
	$80 - $100	9	36	12	28	$p < 0.005$
	Greater than $100	12	48	5	12	
	No Response	9	--	39	--	
	Total	34	100%	82	100%	
C.	Expected Earnings for 1973					
	Less than $2,000	1	4	4	9	
	$2,000 to $2,999	1	4	10	23	
	$3,000 to $3,999	3	12	13	30	$X^2 = 27.3487$
	$4,000 to $,999	2	8	11	26	
	$5,000 to $5,999	7	28	2	5	df = 7
	$6,000 to $7,499	7	28	2	5	$p < 0.001$
	$7,500 to $10,000	3	12	--	--	
	Greater than $10,000	1	4	1	2	
	No Response	9	--	39	--	
	Total	34	100%	82	100%	
D.	Hourly Earnings on First Job					
	Less than $1.60/hour	2	9	12	25	
	$1.60 - $2.00	6	26	22	45	$X^2 = 11.2417$
	$2.01 - $2.50	6	26	10	20	
	$2.51 to $3.00	5	22	4	8	df = 4
	Greater than $3.00	4	17	1	2	$p < 0.010$
	No Response	11	--	33	--	
	Total	34	100%	82	100%	

Table 8-2.1(a) cont.

		LFQ/W Respondents (n=116)*				Test Statistics
		Union Members		Non Members		
		No.	%	No.	%	
E.	Hourly Earnings on First Job					
	Less than $1.60/hour	--	--	6	12	$X^2 = 29.6632$
	$1.60 - $2.00	1	5	24	48	
	$2.01 - $2.50	3	14	12	24	$df = 4$
	$2.51 - $3.00	5	24	1	2	$p < 0.001$
	Greater than $3.00	12	57	7	14	
	No Response	13	--	32	--	
	Total	34	100%	82	100%	

* Of the total ADI sample (n=242) there were 146 subjects not enrolled as full-time students during the survey week. This group completed the LFQ/W questionnaire (while the 96 full-time students filed LFQ/S questionnaires). However, 30 of the LFQ/W respondents did not indicate whether they belonged to unions; hence the sample size for this table is 116. As indicated by the "No Response" entries, not all of the 116 responded to each question dealing with pay. Of the 34 union members, 11 were female.

Table 8-2.1(b)

Hourly Earnings by Labor Union Membership*

	Labor Union Members (n=32)	Nonmembers (n-58)	Difference
Average Hourly Earnings	$\bar{X}$ = $3.06 S_x = .64	$\bar{X}$ = $2.12 S_x = .73	$\bar{X}_M - \bar{X}_N$ = $.94
H_o: $AHE_M = AHE_N$		t = 6.101 significant at $p \leq .001$	

*30% (R^2) of the variation in hourly earnings can be explained by the factor of union membership.

The finding that there was no association between level of world-of-work knowledge and job success for our sample was surprising for a number of reasons, including the fact that it differs from the findings of Parnes and Kohen.[11/] There are, however, a number of important differences in the two studies, not the least of which are the testing instruments and time framework. Indeed, we suspect that if observations of labor force status were made two years (or more) after METU/SMETU testing (and graduation from high school) the results would differ substantially from our 8-months-after-graduation study because the additional time would allow for individual differences among young workers (e.g., in IQ, family background, etc., and perhaps world-of-work knowledge) to find expression in pay differentials and other measures of job success.

Table 8-2.2 indicates the relationship between level of world-of-work knowledge and five indicators of labor force success, and also provides information on job search procedures and labor union membership. Disregarding MEE treatment, subjects (n=416) were partitioned according to scores made on the 1972 SMETU. Individuals scoring in the highest 30% ("high scorers") were compared with those scoring in the lowest 30% ("low scorers") with respect to the seven indicators of labor force behavior and success reported in the table. After the initial partitioning of subjects was done to obtain the high scorers vs low scorers, all subjects for whom we lacked LFQ/W's with the desired labor force information were purged, leaving a sample (n=108) of 37 high scorers and 71 low scorers (see footnote in Table 8-2.2 for explanation of sample used).

11/ "On the basis of information on average hourly earnings and occupational assignment two years after the administration of the occupational information test, it appears that youth with superior information were successful in obtaining better and higher paying jobs." Op. cit., p. 22. To the extent that world-of-work understanding is a reflection of general intelligence, one might expect a positive correlation between METU test scores and job success. We did find a positive correlation between IQ and METU scores but not between IQ and earnings (see Appendix A-6) or between METU and earnings. Parnes and Kohen found a small but statistically significant correlation between IQ scores and hourly earnings for white male workers, though not for blacks. Ibid, p. 21.

Table 8-2.2

SMETU Scores and Indicators of Labor Force Behavior and Success (AVD)*

	Indicator	Highest 30%		Lowest 30%		Test Statistics
		No.	%	No.	%	
A.	Labor Force Status					
	Working full-time	23	62	48	68	$X^2 = 5.026$
	Working part-time	6	16	10	14	df = 5
	Looking for work (Unemployed)	0	0	3	4	p = 0.4127
	Unable to work	3	8	1	1	
	Not interested in outside employment	2	6	5	7	
	Armed Forces	3	8	4	6	
	Total	37	100%	71	100%	
B.	Hourly Wages During Survey Week					
	Less than $1.60/hour	0	0	6	11	
	$1.60 to $2.00/hour	14	52	17	30	
	$2.01 to $2.50/hour	8	30	9	16	$X^2 = 10.379$
	$2.51 to $3.00/hour	3	11	14	25	df = 5
	$3.01 to $4.00/hour	1	4	8	14	p = 0.0652**
	More than $4.00/hour	1	4	2	4	
	No Response	10	-	15	-	
	Total	37	100%	71	100%	
C.	Take-Home Pay During Survey Week					
	Less than $20	1	4	0	0	
	$20 to $39	1	4	3	8	
	$40 to $59	5	20	4	11	$X^2 = 6.624$
	$60 to $79	9	36	8	22	df = 5
	$80 to $100	7	28	11	31	p = 0.2501
	More than $100	2	8	10	28	
	No Response	12	-	35	-	
	Total	37	100%	71	100%	
D.	Expected 1973 Income					
	Less than $2,000	6	23	2	6	
	$2,000 - $2,999	3	12	6	17	
	$3,000 - $3,999	8	31	6	17	
	$4,000 - $4,999	5	19	7	20	$X^2 = 9.449$
	$5,000 - $5,999	2	8	5	14	df = 7
	$6,000 - $7,499	1	4	5	14	p = 0.2220
	$7,500 - $10,000	0	0	3	9	
	More than $10,000	1	4	1	3	
	No Response	11	-	36	-	
	Total	37	100%	71	100%	
E.	Job Satisfaction					
	Very satisifed	11	41	19	40	
	Reasonably satisfied	6	22	14	30	$X^2 = 0.9495$
	Not paid enough	6	22	8	17	df = 5
	Job is boring	2	7	4	9	p = 0.9500
	No hope for advancement	1	4	1	2	
	Other	1	4	1	2	
	No Response	10	--	24	-	
	Total	37	100%	71	100%	

Table 8-2.2 (cont.)

	Indicator	Highest 30%		Lowest 30%		Test Statistics
		No.	%	No.	%	
F.	How Current Job Was Found					
	Checked directly with employer	7	25	17	32	
	Heard about it from a friend	11	39	9	17	
	Advertisement on TV or radio	1	6	1	2	$X^2 = 11.330$
	Parents or other relatives	2	7	14	26	df = 7
	Local office of Ohio Bureau of Employment Services	3	9	1	2	p = 0.1249
	Private employment agency	0	0	1	2	
	High school vocational program	1	6	3	6	
	Other	3	9	7	13	
	No Response	9	-	18	-	
	Total	37	100%	71	100%	
G.	Labor Union Affiliation During Survey Week?					$X^2 = 4.777$
	Yes	4	13	20	34	df = 1
	No	27	87	38	66	p = 0.0288
	No Response	6	-	13	-	
	Total	37	100%	71	100%	

*Available data sample. Initial partitioning by deciles was based on scores made by 416 instructional and control subjects on the 1972 follow-up test of understanding (including subjects for whom LFQ/W is available, subjects for whom LFQ/S is available, and subjects for whom neither LFQ is available.). The sample reported in this table (n=108) includes only the subset of the follow-up test group for whom LFQ/W's containing the necessary information are available. The sample for the highest 30% (n=37) is smaller than the sample for the lowest 30% (n=71) because many of the higher-scoring subjects were enrolled in college during the survey week and therefore were not in the LFQ/W subset. Subjects with SMETU scores of 12 or more correct out of 17 (71% to 100%) make up the highest 30% and subjects with scores of 8 or less correct out of 17 (0% to 47%) make up the lowest 30%. SMETU scores for the entire AVD sample were used rather than just the LFQ/W subset in order to assure significant differences in scores. Had we arrayed scores of only the LFQ/W group, the difference between the highest 30% and the lowest 30% would have been only 2 points, which is less than one standard deviation from the mean ($\bar{X}$=9.721 and S_X=2.983). Somewhat more than 30% of the LFQ/W group are included in each of these samples because such a large number of observations falls within a small range of discrete values.

**Removal of all subjects reporting union membership (n_H=4, n_L=20) virtually eliminates the wage advantage of the low scorers and raises the p-value to 0.3899. See Table 8-2.1 for data on the association of labor union membership and earnings.

Three of the low scorers (4% of the sample) were unemployed in contrast to zero unemployment for the high scorers, but overall there were no statistically significant differences between the groups relative to labor force status. The low scorers had an hourly wage advantage over the high scorers, 43% earning more than $2.50 per hour compared with only 19% of the high scorers; but removal of all subjects reporting union membership (n_H=4, n_L=20) virtually eliminates the wage advantage of the low scorers.

Indicators C, D, and E in the table disclose no highly significant differences. Low scorers relied more heavily on parents or other relative to help them find a job (indicator F) than did the high scorers, who depended more on friends. A significantly larger percentage of low scorers were union members, which again helps to explain the pay advantage enjoyed by that group.

8-3. Conclusions

On the basis of our sample data, it appears that the 56% of the Lancaster High School Class of 1972 that did not enter the armed forces or become full-time students in post-secondary education programs made a relatively smooth transition from school to work. Labor force participation rates, wages, and work satisfaction were relatively high and unemployment low.

Few if any significant differences were found between the MEE treatment groups (instructional vs control) with respect to six indicators (quantitative and qualitative) of early employment success, thus tending to negate the major working hypothesis of the study. Investigation of other variables that could be useful in predicting early job success -- IQ, academic achievement, teacher ratings of personal traits, curriculum choice, school attendance, career planning activities, family income, parents' educational attainment, occupation of household head, work experience before graduation, or world-of-work knowledge -- disclosed no significant association with the five qualitative indicators used. However, our sample data show that members of labor unions l males had higher pay than nonmembers and females.

SECTION 9
SUMMARY AND CONCLUSIONS

This section includes a summary of our principal findings, policy and program implications for Career Education and related programs of human resource development, some observations on the limitations of the study, and suggestions for future research.

9-1. Summary of Principal Findings

With respect to the major working hypothesis tested in the study, we found that while the experimental junior high school course in manpower economics had significant effects on student understanding, attitudes, and behavior in the short run, enrollment in the course was not an important determinant of labor force success as of the designated survey week approximately eight months following graduation from high school. No significant differences were observed between the instructional group and the control group with respect to (1) dropping out of school; (2) enrollment of graduates in post-secondary educational programs; and (3) for the "labor force" sample: employment status, wage rates, occupational status, anticipated annual earnings, work satisfaction (during the survey week) or quantity of employment from graduation up to the time of the survey week. Subjects in the control group reported higher weekly earnings than the instructional group, a disparity that was found to be associated with a higher incidence of union membership among control subjects. During the four and one-half years that elapsed from the end of the experimental one-semester course in January 1968 to the follow-up testing in May 1972, virtually all of the difference in measured world-of-work understanding between the two groups disappeared, as did many attitudinal differences. No significant differences were found between the groups with respect to their education-related behavior during and after high school up to the time of the survey week.

Insert on page 111 between second and third paragraphs --

To our surprise, we found no significant association between early employment success and the following variables: IQ, academic class rank, teacher ratings of personal traits, curriculum choice, school attendance record, career planning activities, family income, parents' education and occupation, work experience prior to graduation, enrollment in the experimental MEE course, world-of-work attitudes, and level of world-of-work knowledge. Membership in labor unions and sex are the only two factors significantly associated with wage rates and earnings for our sample.

Our second major hypothesis concerned the relationship between world-of-work knowledge and early employment success for young workers. Parnes and Kohen, in their study of male workers 14-24 years of age, found a positive correlation between the extent of world-of-work knowledge -- as measured by a special test of occupational information -- and both wage rates and occupational status. Using our own SMETU instrument, which is a broader measure of world-of-work knowledge, and including both male and female workers (17-19 years of age), we found no association between extent of knowledge and hourly earnings or any other employment indicator as of the survey week. In contrast to Parnes and Kohen, who concluded that labor market information was a form of human capital that could be converted into higher pay, our particular test of world-of-work knowledge and our sample of recent high school graduates (male and femela) did not confirm the existence of a significant relationship between world-of-work knowledge and higher pay.

The third hypothesis of our study focussed on the affective dimension of education and employment: the extent to which attitudes influence early labor force success as causal variables and as aspects of the quality of employment (QOE) actually attained. We found that for our sample, attitudes toward labor unions were associated significantly with union membership; and this in turn was significantly linked to higher wages. Regarding attitudes as an aspect of QOE, we observed relatively high levels of job satisfaction for both MEE treatment groups. Moreover, we found among instructional subjects what appears to be a higher level of valuation of nonpecuniary rewards from work than was observed among the somewhat better paid control subjects.

It is possible that the most important longer-run effects of the experimental MEE course did not involve changes in the students who were enrolled in the course, but changes in the schools (e.g., increased emphasis on economics and world-of-work topics and better-trained teachers as described in Section 3-3). Then, too,

there may have been "elusive" changes in the individual students that do not clearly manifest themselves at this time or in response to the particular research instruments and techniques used in the study. It is also possible, however, that we have succeeded in observing most of what exists to be observed.[1/]

9-2. Policy and Program Implications

A certain amount of evidence has accumulated during the past five years (including professional acceptance and widespread school adoption) in support of an instructional program focussing on labor market processes, occupational opportunities, career decisionmaking, technological change, patterns of skill acquisition and human resource development, the nature and rewards of work (economic and non-economic) and the structure and functioning of the American economy. It is believed that such a program can contribute importantly to preparing young men and women for effective participation in socioeconomic life. The case for including material of this type in the school curriculum, whether as part of a Career Education program or as a separate entity, can be made on the basis of judgments by educators and specialists in human development, students (and their parents) who perceive the need for such instruction, leaders in industry and labor, and other decisionmakers in our society.

The specific findings reported in this study on the longer-run behavioral effects of the 1967-68 experimental course in Lancaster, Ohio, however, do not appear to strengthen directly the case for world-of-work economic education. It is evident that an MEE-type program presented to students with the characteristics of our sample does not afford them measurable advantages over their counterparts not enrolled in the program in terms of their very early encounters with

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1/ One must resist the "sinister force" hypothesis which presses itself into the conciousness of researchers who find less in the way of positive outcomes than they might have expected. For an interesting discussion on interpreting negative results in educational research, see J. M. Stevens, The Process of Schooling, pp. 82-86.

the manpower market.

9-3. Limitations of the Research

As indicated in Section 1-3, the study is centered on a single school system and community that might well be characterized as "racially homogeneous, blue-collar, middle America." A student population and community with dissimilar characteristics might produce different educational outcomes. The sample used in most of the analysis includes 37.5% of the population cohort and was selected (nonrandomly) on the basis of having maximum data available for these subjects. Some contamination of the control sample occurred. Since no research observations were made between January 1968 and May 1972, there are data gaps relative to world-of-work understanding, attitudes, and other factors. The low dropout rate and relatively smooth school-to-work transition of the cohort had the effect of limiting the range of differences in response variables that are of interest to the investigation.

Budget and staff constraints prevented optimal accumulation, organization, and analytical exploitation of the research data.

9-4. Suggestions for Future Research

We believe the existing data will yield additional interesting, significant, and useful findings, especially in the area of world-of-work attitudes.[2/] More analysis could be done with the predictor variables dealt with only in a preliminary way in this study, viz., sex, high school academic rank, teacher ratings of personal traits, school attendance, career planning activities, family income, parents' education, parents' occupations, composite measure of socioeconomic

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2/ Richard V. Kauffman of the Colorado State University Department of Economics, an Associate Investigator in the present study, is pursuing this topic as part of his doctoral research on education production functions.

status, and pre-graduation work experience. Much more could be done with the LFQ/S sample -- those who were full-time students in college or other post-secondary educational programs during the survey week. We hope that other researchers will be interested in utilizing some or all of the data -- whether in relation to the experimental manpower course or for totally different purposes.

We would be interested to see further investigation of the association between level of world-of-work knowledge (using METU, SMETU, Ohio State University's Occupational Information Test, or another instrument) and early employment success.

Finally, we hope it will be possible to pursue the longitudinal investigation with additional data observations in 1977 or 1978 when members of the cohort who went to college will have graduated and when those who entered directly into the world of work will have accumulated five or six years of employment experience. At that time (10 years after exposure to the experimental course), patterns of career development will be more clearly emerging.

BIBLIOGRAPHY

"An Experimental Junior High School Course in Occupational Opportunities and Labor Market Processes", Research Visibility Section, "Exemplary Programs and Residential Schools," Topic I: GUIDANCE, American Vocational Journal, Vol. 44, No. 7 (October 1969) pp. 33f.

Becker, Gary S., Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education (New York: National Bureau of Economic Research, Columbia University Press, 1964).

Coleman, James S., et al., Equality of Educational Opportunity (Washington, D.C.: U.S. Office of Education, National Center for Educational Statistics, Project No. OE-38001, 1966). (Also see reports by Mayeske, et al.)

Committee for Economic Development, Education for the Urban Disadvantaged from Preschool to Employment (New York: Committee for Economic Development, 1971).

Darcy, Robert L., An Experimental Junior High School Course in Occupational Opportunities and Labor Market Processes, Final Report (Athens, Ohio: Center for Economic Education, Ohio University, 1968). Submitted to the U.S. Office of Education, Bureau of Research; BR-5-1203, June 1968, OEG-3-6-051203-2080; ERIC Document Reproduction Service Price MF-$2.25 HC-$24.52, 611p. (Title on cover: Final Report on the MD/OAEL Project.)

Darcy, Robert L., "A Classroom Introduction to the World of Work," Occupational Outlook Quarterly, Vol. 15, No. 4 (Winter 1972) pp. 23-26.

Darcy, Robert L., "Manpower in a Changing Economy," American Vocational Journal, Vol. 44, No. 3 (March 1969) pp. 57-60.

Darcy, Robert L., "The World of Work: New Thrust in Economic Education," in Gladys Bahr (ed.), Two Decades of Partnership in Economic Education (Washington, D.C.: National Business Education Association, 1969) pp. 63-68.

Darcy, Robert L., (ed.), Proceedings of the Ohio Manpower Development Institute, May 1-2, 1964, Columbus, Ohio (Athens, Ohio: Ohio Council on Economic Education, Ohio University, 1964).

Darcy, Robert L. and Phillip E. Powell, Manpower and Economic Education: A Personal and Social Approach to Career Education (Denver: Love Publishing Co., 1973).

Darcy, Robert L. and Phillip E. Powell, Manpower Education in a Growing Economy (Athens, Ohio: Center for Economic Education, Ohio University, 1968).

Eggeman, Donald E. et al, Problems in the Transition from School to Work as Perceived by Youth Opportunity Center Counselors: A National Survey (Columbus, Ohio: The Center for Vocational and Technical Education, Ohio State University, 1969).

ERIC Clearinghouse on Vocational and Technical Education, Career Education Practice, Information Series No. 65 (Columbus, Ohio: Ohio State University, December 1972).

Grobman, Hulda, Evaluation Activities of Curriculum Projects (American Education Research Association Monograph Series on Curriculum Evaluation, reprinted by Rand McNally, Chicago, 1968).

Jencks, Christopher, et al, Inequality: A Reassessment of the Effect of Family and Schooling in America (New York: Basic Books, 1972).

Kaufman, Jacob J., et al., The Role of the Secondary Schools in the Preparation of Youth for Employment (University Park, Pa.: Institute for Research on Human Resources, 1967).

Lovell, Malcolm R., Jr., "Let's Cure Job Unreadiness," Manpower, Vol. 4, No. 2 (February 1972) pp. 26-26.

Marland, Sidney P., "Career Education: Every Student Headed for a Goal," American Vocational Journal, Vol. 47, No. 3 (March 1972) pp. 34-36f. (Entire issue devoted to Career Education.)

Mayeske, George W., et al., A Study of Our Nation's Schools (Washington, D.C.: U.S. Office of Education, DHEW Publication No. (OE) 72-142, 1972).

Mayeske, George W., et al., A Study of the Achievement of Our Nation's Students (Washington, D.C.: U.S. Office of Education, DHEW Publication No. (OE) 72-131, 1973).

Newsletter of the National World-of-Work Economic Education (WOWEE) Project, Center for Economic Education, Colorado State University, No. 1 (Fall 1972).

O'Donnell, Dennis, A Factor Analysis of Work-Related Attitudes (Fort Collins, Colorado: Department of Economics, Colorado State University, 1970). Unpublished Master's Thesis.

Oetting, E. R. and C. D. Miller, "The Work Adjustment Hierarchy," (Fort Collins, Colorado: Department of Psychology, Colorado State University, 1973). Mimeographed, 22 pages.

OHIO STATE UNIVERSITY, CENTER FOR HUMAN RESOURCE RESEARCH:

*Career Thresholds: A Longitudinal Study of the Education and Labor Market Experience of Male Youth, Manpower Research Monograph No. 16, U.S. Department of Labor, Manpower Administration.
- Volume 1 (1970) by Herbert S. Parnes, et al.
- Volume 2 (1971) Herbert S. Parnes, Project Director.
- Volume 3 (1971) by Andrew I. Kohen and Herbert S. Parnes.
- Volume 4 (1973) by Andrew I. Kohen.

*Years for Decision: A Longitudinal Study of the Educational and Labor Market Experience of Young Women, Manpower Research Monograph No. 24, U.S. Department of Labor, Manpower Administration.
- Volume 1 (1971) Herbert S. Parnes, Project Director.
- Volume 2 (1973) by Roger D. Roderick.

*Determinants of Early Labor Market Success Among Young Men: Race, Ability, Quantity and Quality of Schooling by Andrew I. Kohen (Ph.D. dissertation, 1973).

*Occupational Information and Labor Market Status: The Case of Young Men by Herbert S. Parnes and Andrew I. Kohen (1973).

Pierce, William F., "The Career Education Concept," American Education, Vol. 9, No. 3 (April 1973) pp. 4-6.

Princeton Manpower Symposium, The Transition from School to Work (Princeton, N.J.: Industrial Relations Section, Princeton University, 1968).

"Program to Extend Manpower Project," Progress in Economic Education, Joint Council on Economic Education, Vol. 4, No. 1 (September 1972).

Stevens, J. M., The Process of Schooling (New York: Holt, Rinehart and Winston, 1967).

U.S. Bureau of the Census, Census of Population: 1970, General Social and Economic Characteristics, Ohio (Washington, D.C.: U.S. Government Printing Office, 1972).

U.S. Department of Health, Education and Welfare, Indicators of Educational Outcome, Fall 1972 (Washington, D.C.: U.S. Government Printing Office, 1973).

U.S. Department of Labor, "Bridging the Gap from School to Work," Manpower Report of the President 1968 (Washington, D.C.: U.S. Government Printing Office, 1968). Also, "New Perspectives on Youth Employment," Manpower Report of the President 1972 (Washington, D.C.: U.S. Government Printing Office, 1972).

U.S. Department of Labor, Manpower Administration, Breakthrough for Disadvantaged Youth (Washington, D.C.: U.S. Government Printing Office, 1969).

U.S. Office of Education (Maryland State Board of Education and Olympus Research Corporation) Career Education: A Handbook for Implementation (Washington, D.C.: U.S. Government Printing Office, 1972).

Office of Planning, Research and Evaluation, Office of Economic Opportunity, Federal Youth Programs (Washington, D.C.: Office of Management and Budget, 1972).

U.S. Senate, Notes and Working Papers Concerning the Administration of Programs Authorized Under Vocational Education Act of 1963, Public Law 88-210, As Amended (Subcommittee on Education, Committee on Labor and Public Welfare, Washington, D.C., 1968).

Young, Anne M. "The High School Class of 1972: More at Work, Fewer in College," Monthly Labor Review, Vol. 96, No. 6 (June 1973) pp. 26-32.

Youth in Transition, Volume I, "Blueprint for a Longitudinal Study of Adolescent Boys," by Jerald Bachman, et al (Ann Arbor, Mich.: Institute for Social Research, University of Michigan, 1967; revised 3rd printing, 1972).
Youth in Transition, Volume II, "The Impact of Family Background and Intelligence on Tenth-Grade Boys," by Jerald Bachman, et al, (Ann Arbor, Mich.: Institute for Social Research, 1971).
Youth in Transition, Volume III, "Dropping-Out--Problem or Symptom?" by Jerald Bachman, et al (Ann Arbor, Mich.: Institute for Social Research, 1971).
Youth in Transition, Volume IV, "Evolution of a Strategy for Longitudinal Analysis of Survey Panel Data," by Terrence N. Davidson (Ann Arbor, Mich.: Institute for Social Research, University of Michigan, 1972).

Work in America, Report of a Special Task Force to the Secretary of Health, Education, and Welfare (Cambridge: MIT Press, 1973).

APPENDIX A-1

IQ's of Graduates (ADI) and Dropouts, Instructional vs Control*

Graduates			Dropouts		
All n = 242	I n = 134	C n = 108	All n = 60	I n = 33	C n = 27
$\bar{X}$ = 106.33 S_x = 13.14	$\bar{X}$ = 106.94 S_x = 13.82	$\bar{X}$ = 105.56 S_x = 12.25	$\bar{X}$ = 82.64 S_x = 14.40	$\bar{X}$ = 83.36 S_x = 13.64	$\bar{X}$ = 81.79 S_x = 15.44

Graduates vs Dropouts

Instructional

$\bar{X}_{GI} - \bar{X}_{DI} = 23.58$

$t = 8.795$

Significant at $p \leq 0.001$

Control

$\bar{X}_{GC} - \bar{X}_{DC} = 23.76$

$t = 8.547$

Significant at $p \leq 0.001$

Dropouts

Instructional vs Control

$\bar{X}_{DI} - \bar{X}_{DC} = 1.97$

$t = 0.525$

Significant at $p = 0.600$

*Findings: IQ's of graduates (106.3) were significantly higher than dropouts (82.6); there were no significant differences between MEE treatment groups (instructional vs control) for either the graduates or the dropouts. (See Sections 3-2, 4, and 7-3 above).

APPENDIX A-2

TECHNICAL NOTES (STATISTICAL CONTROL METHODS)

Two methodologies were considered to statistically control for socioeconomic and other background differences between the MEE treatment groups. For analyses that make use of contingency tables (X^2 test for independence), the table can be expanded from two to a greater number of dimensions to include the effects of relevant background variables. Although the number of dimensions is theoretically unlimited, tables of more than three dimensions present complex problems of interpretation. In addition, the continued partitioning of the MEE treatment groups by background characteristics requires a relatively large sample in order to avoid the problem of having cells containing insufficient observations. For these reasons, it was decided to limit contingency tables to three dimensions, i.e., to control for no more than one background variable at a time, as in the case of testing the effects of MEE on labor force status while controlling for family income variations.

Where deemed worthwhile to use multiple regression techniques, it would be possible to determine the effects of MEE enrollment independent of the other explanatory variables in the following way:

(1) first perform the regression

$$y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \ldots + \beta_n x_n$$

where y is the dependent variable and x_1 is the variable under consideration in explaining y independent of background variables $x_2 \ldots x_n$;

(2) then adjust the y's by the mean deviations of the $x_2 \ldots x_n$ variables, i.e.,

$$y^* = y - \beta_2(x_2 - \bar{x}_2) - \beta_3(x_3 - \bar{x}_3) - \ldots - \beta_n(x_n - \bar{x}_n)$$

(3) finally, in order to show the independent effect of x_1,

$$y^* = \beta_o^* + \beta_1 x_1$$

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APPENDIX A-3(a)

SMETU Scores of Male vs Female Subjects, Instructional vs Control (ADI)*

		Instructional	Control	I vs C	All
1972	Males	$\bar{X}$ = 10.20 S_x = 3.23 n = 65	$\bar{X}$ = 9.81 S_x = 2.47 n = 53	$\bar{X}_I - \bar{X}_C$ = 0.39 t = 0.721 Sign. at p = 0.42	$\bar{X}$ = 10.03 S_x = 2.91 n = 118
f-up	Females	$\bar{X}$ = 10.60 S_x = 2.56 n = 69	$\bar{X}$ = 9.65 S_x = 2.80 n = 55	$\bar{X}_I - \bar{X}_C$ = 0.95 t = 1.916 Sign. at p = 0.07	$\bar{X}$ = 10.17 S_x = 2.70 n = 124
	Males vs Females	$\bar{X}_M - \bar{X}_F$ = -0.40 t = 0.756 Sign. at p = 0.450	$\bar{X}_M - \bar{X}_F$ = 0.16 t = 0.313 Sign. at p = 0.750		$\bar{X}_M - \bar{X}_F$ = -0.14 t = 0.400 Sign. at p = 0.750
1968	Males	$\bar{X}$ = 10.11 S_x = 3.46 n = 65	$\bar{X}$ = 7.45 S_x = 2.37 n = 53	$\bar{X}_I - \bar{X}_C$ = 2.66 t = 4.741 Sign. at p 0.001	$\bar{X}$ = 8.92 S_x = 3.29 n = 118
post	Females	$\bar{X}$ = 10.91 S_x = 2.75 n = 69	$\bar{X}$ = 8.00 S_x = 2.47 n = 55	$\bar{X}_I - \bar{X}_C$ = 2.91 t = 6.133 Sign. at p 0.001	$\bar{X}$ = 9.62 S_x = 2.99 n = 124
	Males vs Females	$\bar{X}_M - \bar{X}_F$ = -0.80 t = 1.497 Sign. at p = 0.15	$\bar{X}_M - \bar{X}_F$ = -0.55 t = 1.172 Sign. at p = 0.30		$\bar{X}_M - \bar{X}_F$ = -0.70 t = 1.747 Sign. at p = 0.075
1967	Males	$\bar{X}$ = 7.55 S_x = 2.75 n = 65	$\bar{X}$ = 7.02 S_x = 2.19 n = 53	$\bar{X}_I - \bar{X}_C$ = 0.53 t = 1.14 Sign. at p = 0.250	$\bar{X}$ = 7.31 S_x = 2.52 n = 118
pre	Females	$\bar{X}$ = 7.78 S_x = 2.58 n = 69	$\bar{X}$ = 7.58 S_x = 2.61 n = 55	$\bar{X}_I - \bar{X}_C$ = 0.20 t = 0.428 Sign. at p = 0.65	$\bar{X}$ = 7.69 S_x = 2.59 n = 124
	Males vs Females	$\bar{X}_M - \bar{X}_F$ = -0.23 t = 0.497 Sign. at p = 0.650	$\bar{X}_M - \bar{X}_F$ = -0.56 t = 1.213 Sign. at p = 0.250		$\bar{X}_M - \bar{X}_F$ = -0.38 t = 1.158 Sign. at p = 0.300

*Findings: Females scored slightly higher than males on the SMETU pre-test in 1967 (p=.30); pre to post gain scores of instructional females (3.13) were slightly greater than instructional males (2.56); and 1972 follow-up scores of all MEE treatment categories were about equal between the sexes (P_I=.45, P_C=.75, P_Σ=.75).

APPENDIX A-3(b)

SMETU Scores by Junior High School (ADI)*

Observation	1967	1968	1972
General Sherman n = 83	$\bar{X} = 7.20$ $S_x = 2.46$	$\bar{X} = 9.80$ $S_x = 3.45$	$\bar{X} = 9.77$ $S_x = 2.62$
Ewing n = 80	$\bar{X} = 8.13$ $S_x = 2.88$	$X = 9.18$ $S_x = 3.18$	$\bar{X} = 11.00$ $S_x = 2.97$
Stanbery n = 79	$\bar{X} = 7.20$ $S_x = 2.19$	$\bar{X} = 8.84$ $S_x = 2.75$	$\bar{X} = 9.53$ $S_x = 2.60$
General Sherman vs Ewing	$\bar{X}_{GS} - \bar{X}_E = -0.93$ $t = 2.195$ sign. at $p = 0.035$	$\bar{X}_{GS} - \bar{X}_E = 0.62$ $t = 1.193$ sign. at $p = 0.25$	$\bar{X}_{GS} - \bar{X}_E = -1.23$ $t = 2.803$ sign. at $p = 0.007$
General Sherman vs Stanbery	$\bar{X}_{GS} - \bar{X}_S = 0.08$ $t = 0.000$ sign. at $p = 1.000$	$\bar{X}_{GS} - \bar{X}_S = 0.96$ $t = 1.951$ sign. at $p = 0.050$	$\bar{X}_{GS} - \bar{X}_S = 0.24$ $t = 0.584$ sign. at $p = 0.600$
Ewing vs Stanbery	$\bar{X}_E - \bar{X}_S = 0.93$ $t = 2.271$ Sign. at $p = 0.020$	$\bar{X}_E - \bar{X}_S = 0.34$ $t = 0.671$ sign. at $p = 0.500$	$\bar{X}_E - \bar{X}_S = 1.47$ $t = 3.319$ sign. at $p = 0.001$

Changes in General Sherman Group	Changes in Ewing Group	Changes in Stanbery Group
$\bar{X}_{1968} - \bar{X}_{1967} = 2.60$ $t = 6.946$ Significant at $p < 0.001$	$\bar{X}_{1968} - \bar{X}_{1967} = 1.05$ $t = 3.718$ Significant at $p < 0.001$	$\bar{X}_{1968} - \bar{X}_{1967} = 1.64$ $t = 5.263$ Significant at $p < 0.001$
$\bar{X}_{1972} - \bar{X}_{1968} = -0.03$ $t = 0.076$ Significant at $p = 0.95$	$\bar{X}_{1972} - \bar{X}_{1968} = 1.82$ $t = 6.641$ Significant at $p < 0.001$	$\bar{X}_{1972} - \bar{X}_{1968} = 0.69$ $t = 2.168$ Significant at $p = 0.035$
$\bar{X}_{1972} - \bar{X}_{1967} = 2.57$ $t = 8.116$ Significant at $p < 0.001$	$\bar{X}_{1972} - \bar{X}_{1967} = 2.87$ $t = 9.503$ Significant at $p < 0.001$	$\bar{X}_{1972} - \bar{X}_{1967} = 2.33$ $t = 6.905$ Significant at $p < 0.001$

*Findings: Students at Ewing Junior High School (highest socioeconomic status) had highest pre-test and 1972 SMETU scores but made the smallest pre to post gain; General Sherman students recorded by far the greatest pre to post gains. See Section 4-3 above.

APPENDIX A-4(a)

Date of Dropout and Reason for Dropping Out

Date of Dropout		
Before 6/69 (cohort in 9th grade)	8	
9/69 - 6/70 (cohort in 10th grade)	18	
9/70 - 6/71 (cohort in 11th grade)	22	
After 9/71 (cohort in 12th grade)	24	
		72
Factors Contributory to Dropping Out*		
Pregnancy	17	
Delinquency, Truancy, etc.	15	
Broken Home	9	
"Limited" Mental Ability	7	
Drugs	5	
Psychosocial Problems Related to Physical Impairments	5	
Family Opposed to Education	4	
Left School to Work Because of Family Responsibilities	3	
Other and Unknown	16	

* Some dropouts included under more than one category, e.g., Pregnancy and Broken Home. It is not possible to know the precise reason for dropping out. These data were compiled as a result of conversations with school counselors.

APPENDIX A-4(b)

Labor Force Status, Occupational Distribution, and Earnings
Dropouts vs Graduates

	Dropouts (n=44)		Graduates (ADI) (n=242)	
	No.	%	No.	%
Labor Force Status				
Total Sample	44	100.0	242	100.0
Inmates of Institutions	4	9.1	-	-
Noninstitutional Population	40	90.9	242	100.0
Members of Armed Forces	4	10.0	11	4.5
(% noninstitutional population)				
Civilian Labor Force	21	52.5	118	48.8
(% noninstitutional population)				
Employed	17	81.0	112	95.0
Unemployed	4	19.0	6	5.0
Not in Labor Force	15*	37.5	113	46.7
(% noninstitutional population)				
Occupational Distribution				
White-Collar Workers	-	-	39	36.4
Blue-Collar Workers	(13)	(76.5)	(54)	(50.5)
Craftsmen & Foremen	1	7.7	4	7.4
Operatives	10	76.9	24	44.4
Laborers	2	15.4	26	48.2
Service Workers	4	23.5	14	13.1
Earnings and Hours Worked				
Mean Hourly Wage (Employed CLF)	$ 2.47		$ 2.41**	
Mean Hours Worked Per Week	43.2		39.2**	
Mean Weekly Take Home Pay	$91.94		$82.03**	

* Fourteen female.

** These figures are approximations based on the class midpoints (n=109). See LFQ/W questionnaire in Appendix B-11 for form of data actually collected.

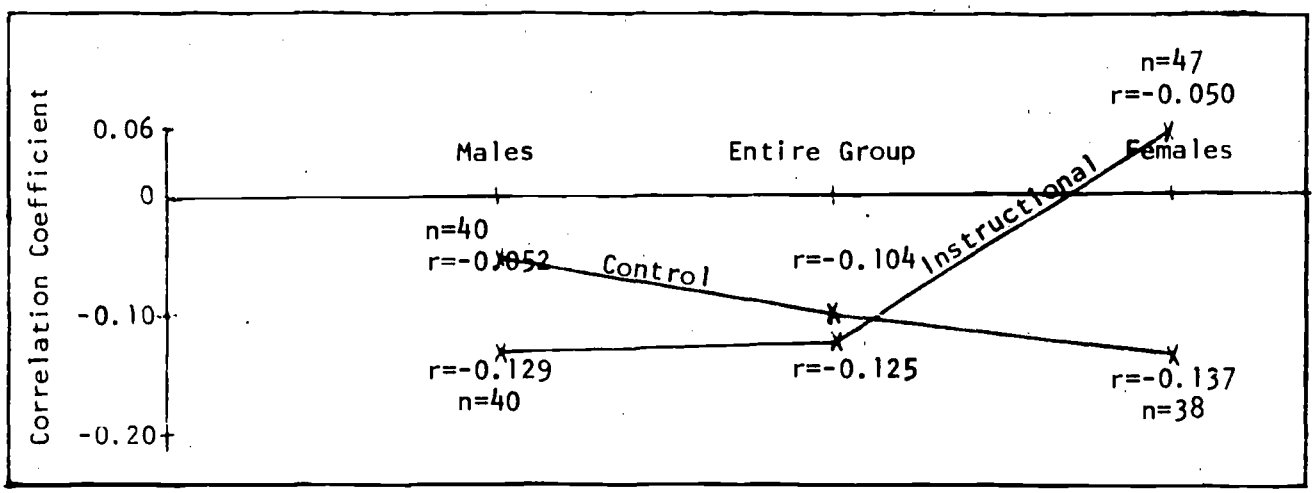
APPENDIX A-5

Post-Graduation Employment Experience of 'Employed and Other' Subjects, Instructional vs Control (ADI Sample)

	Indicator	Instructional		Control		Test Statistics
		No.	%	No.	%	
A.	No. of jobs held since 6/1/72					
	None	6	9	3	6	$X^2 = 2.868$
	one job	27	40	27	54	df = 3
	two jobs	25	37	16	32	p = .4124
	three or more	10	15	4	8	
	Total	68	100%	50	100%	
B.	If "none" above, was employment actively sought between 6/1/72 and 2/11/73?					Inadequate Sample
	Yes	4	67	1	25	
	No	2	33	3	75	
	Total	6	100%	4	100%	
C.	How many months elasped between 6/1/72 and first job lasting one month or longer?					$X^2 = 2.770$
	less than one month	27	63	17	49	df = 3
	2-3 months	8	19	10	29	p = .4284
	4-6 months	4	9	2	6	
	more than 6 months	4	9	6	17	
	Total	53	100%	35	100%	
D.	How many times unemployed for more than a full week since 6/1/72?					
	never	19	44	20	45	$X^2 = .187$
	only once	17	40	16	36	df = 3
	2-3 times	4	9	4	9	p = .9796
	4 or more times	3	7	4	9	
	Total	43	100%	44	100%	
E.	How long out of work during your most recent period of unemployment?					
	less than one month	9	22	11	31	$X^2 = 4.245$
	2-3 months	12	30	12	33	df = 4
	4-6 months	3	7	2	6	p = .3739
	more than 6 months	4	10	0	0	
	never unemployed	12	30	11	31	
	Total	40	100%	36	100%	
F.	Longest period of unemployment since 6/1/72.					
	less than one month	9	21	10	27	$X^2 = 1.142$
	2-3 months	13	30	8	22	df = 4
	4-6 months	3	7	2	5	p = .8875
	more than 6 months	4	9	3	8	
	never unemployed	14	33	14	38	
	Total	43	100%	37	100%	

APPENDIX A-6

Association of IQ and Hourly Earnings,
by MEE Treatment and by Sex (AVD, n=165)*



*Findings: There is no significant correlation between IQ and hourly earnings for the subset of the AVD sample for whom we have wage data whether partitioned by MEE treatment or by sex; at most, 2% (r^2) of the variance in hourly earnings can be attributed to differences in IQ.

APPENDIX A-7

Average Hourly Earnings of Employed Subset of ADI (n=109), Male vs Female*

	Total Sample (n=109)	Males (n=51)	Females (n=58)	Difference
Average Hourly Earnings	$\bar{X}$ = \$2.41 S_x = \$0.83	$\bar{X}$ = \$2.71 S_x = \$0.84	$\bar{X}$ = \$2.14 S_x = \$0.74	$\bar{X}_M - \bar{X}_F$ = \$0.57

(Means calculated from midpoints of income classes.)

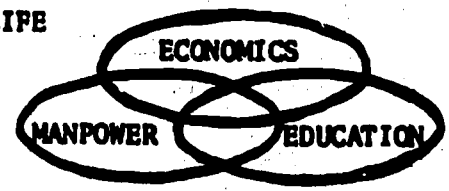
H_o: $AHE_M = AHE_F$

Reject H_o
$t = 3.734$
significant at $p \leq .001$

*Findings: Without regard to MEE treatment, average hourly earnings of males in our sample were significantly higher than average hourly earnings of females; the ratio of female to male earnings for this sample of young Lancaster workers (F/M = 79%) was higher than the female-to-male ratio of annual earnings for the national labor force as a whole (F/M = 58%, 1972) when calculated on the basis of full-time year-round workers.

Appendix B-1
METU

MANPOWER DEVELOPMENT / OPPORTUNITIES IN AMERICAN ECONOMIC LIFE



MANPOWER ECONOMICS
TEST OF UNDERSTANDING
(M E T U)

Instructions

This is a 40-question test of what you know about "world-of-work economics."

As you carefully read each question, choose the ONE best answer and blacken the space on the answer sheet that corresponds to the best answer. Please mark a response for every question, even if you aren't sure you know the correct answer.

The score you make on this test will not affect your grades or school record. Nevertheless, we urge you to make the very best score that you can on the test.

MANPOWER ECONOMICS: TEST OF UNDERSTANDING

MULTIPLE CHOICE: Read the question carefully, then choose the ONE best answer and blacken the space on the answer sheet that corresponds to the best answer. Try to answer every question, even if you aren't sure you know the correct answer.

1. The main economic effect of technological change and automation since World War II has been to:
   1. double the average rate of unemployment.
   2. increase production costs per unit of output.
   3. raise the productivity of workers.
   4. reduce the total earnings of workers.

2. The number of workers in the civilian labor force in the United States is about:
   1. 85 thousand.
   2. 850 thousand.
   3. 85 million.
   4. 1.2 billion.

3. Studies by sociologists show that in the United States a person's social status is:
   1. entirely unrelated to his job.
   2. very closely related to his job.
   3. related to his job only in small towns.
   4. related to his job only in large cities.

4. Occupational skills that are likely to be most useful and valuable to a worker (over the next 20 or 30 years) are:
   1. skills that are highly specialized to a particular job.
   2. general communications skills such as reading, writing, and working with other people, that can be transferred to different kinds of jobs.
   3. such practical skills as knowing how to operate a drill press or lathe or a hair-drying machine in a beauty shop.
   4. skills in using standard calculating equipment to solve routine problems in business finance.

5. Income per person in Ohio (if we divided the total income received by all persons in Ohio by the total number of men, women, and children who live in the state) currently is about:
   1. $500 per year.
   2. $1500 per year.
   3. $3500 per year.
   4. $6000 per year.

6. Which of the following jobs is usually performed by a technician?
   1. Doing original research in nuclear physics at a university laboratory.
   2. Tightening bolts on an automobile as it moves down the assembly line.
   3. Correcting a worker who has made errors on his production line job.
   4. Checking blood specimens in a hospital for signs of disease.

7. The maximum amount of goods and services that a nation can produce in any one year is set by:
   1. its total supply of natural resources, including land and mineral deposits.
   2. the amount of money people have to spend.
   3. regulations and controls determined by the government.
   4. the level of technology and the quantity and quality of manpower and nonhuman resources available.

8. In general, what is the effect of more years of schooling on the lifetime earnings that an individual can expect?
   1. Earnings will be much lower because of income not earned while still in school.
   2. Total earnings will be about the same, regardless of how much schooling a person has.
   3. Earnings will be higher for people with more schooling.
   4. Total lifetime earnings will be somewhat higher for people who go directly to work when they reach age 16 than for those who spend one or two years in college.

9. In a basically private-enterprise market economy, such as the U. S. economic system, who generally has the most influence in determining what goods and services will be produced?
   1. Consumers.
   2. Federal government officials.
   3. The Chamber of Commerce.
   4. Labor unions.

10. If you were a recent high school graduate (or dropout) and wanted help in finding a job, which one of the following agencies would generally be the best place to go?
   1. Regional office of the U. S. Department of Labor.
   2. Nearest Job Corps Training Center.
   3. Chamber of Commerce in your city.
   4. Local office of Ohio Bureau of Employment Services.

11. Between 1970 and 1980 employment in the nation will probably increase most in which one of the following industry groups?
   1. Wholesale and retail trade.
   2. Manufacturing.
   3. Agriculture.
   4. Mining.

12. Gross National Product is a measure of the:
   1. quantity of goods and services sold during the year by private business firms.
   2. part of total production which is purchased by the federal government.
   3. value of a nation's annual output of goods and services.
   4. income received by all persons, before taking out taxes.

13. According to behavioral science studies, which one of the following workers is likely to have the most self-respect and feeling of personal worth?
    1. Herman Jones, a man who is continuously successful on his job.
    2. "Hoop" Thompson, a former junior college basketball star who now works on a car wash line.
    3. Miss Veronica Green, 30-year-old secretary in a typing pool, who was selected Homecoming Queen in her senior year of high school.
    4. John Andrews, who gets the highest salary.

14. The term "economic resources" is defined by economists to include:
    1. shares of stock in a corporation.
    2. everything that can be used in production.
    3. profits and dividends.
    4. labor, money, advertising, and capital.

15. Industrial studies show that low worker morale on an assembly line is most likely to result when the:
    1. workers go to different churches.
    2. foreman insists that each man follow the company policy of wearing his safety helmet.
    3. workers all belong to the same union.
    4. foreman doesn't allow workers to talk to one another.

16. Which of the following jobs usually requires the most years of training?
    1. Automobile assembly-line worker.
    2. Department store sales clerk.
    3. Waitress.
    4. Journeyman plumber.

17. The total lifetime earnings (from age 18 to 64) of male high school graduates exceed the lifetime earnings of high school dropouts by approximately:
    1. 2 per cent.
    2. 15 per cent.
    3. 50 per cent.
    4. no difference.

18. The "opportunity cost" of a new public high school is the:
    1. other economic goods that must be given up in order to build the school.
    2. increase in taxes that people have to pay.
    3. cost of constructing the school now as opposed to the cost of building the new school at a later date.
    4. profits that can be earned on the project by the construction company.

19. The total number of job opportunities available in 1980 will be greatest for:
    1. coal miners.
    2. elementary school teachers.
    3. journeyman electricians.
    4. airline stewardesses.

20. The money that is used to pay the costs of building and operating public schools comes mainly from:
    1. tuition and special fees and charges paid by parents of school children.
    2. the federal government.
    3. property taxes paid by home-owners and business in the local community, plus funds from the state government.
    4. payments from the state government based on the needs of individual pupils enrolled in the schools.

21. The primary goal of labor unions in the United States historically has been to:
    1. get higher wages, shorter hours and improved working conditions for their members.
    2. establish a separate political party to gain control over the national government.
    3. overthrow the basic institutions of capitalism and replace them with socialism.
    4. call strikes and set up picket lines.

22. The percentage rate of return on total resources invested in education (comparing costs of additional schooling with the extra earnings of people having more education) is highest for completion of which level of education?
    1. Completion of the eighth year of school.
    2. Completion of the senior year of high school.
    3. Completion of one year of college.
    4. Completion of the fourth year of college.

23. The basic problems that face every economic system, including the American economy, are:
    1. how to increase profits, how to eliminate poverty, and what jobs government should assign to men and women 18 years and older.
    2. what goods and services to produce, how much to produce, and how to distribute the nation's income among the various members of the society.
    3. how to increase the supply of money, deciding the kinds of goods and services to produce, and guaranteeing that every worker receives equal earnings.
    4. preventing government from interfering in the economy, producing the largest possible volume of goods and services, preserving the rights of property.

24. Wages of American workers are high chiefly because:
    1. the government sets wage rates.
    2. the productivity of the American worker is high.
    3. employers believe they have a social responsibility to pay high wages.
    4. most workers belong to strong labor unions.

25. Which procedures would most likely be used by a person who wanted to follow the "steps in sound economic reasoning" to decide on a plan for preventing inflation?
    1. Identify the problem, decide on a solution, see how this will affect your own economic self-interest, think of policies that other people might suggest, and then find arguments against the other solutions.
    2. Define the problem, identify appropriate goals, consider alternative possible solutions, study the probable effects of the different solutions, and choose the best solution in terms of your stated goals.
    3. Identify the goals, study the problems, consider alternative solutions, pick the best solution, and prepare arguments to defend your choice.
    4. Define the goals, identify the key facts, decide on the best policy, study the most likely results of using that policy, and stick to your choice against all criticism.

26. By 1980, women will make up what proportion of the civilian labor force in Ohio?
    1. About one-tenth.
    2. About one-fifth.
    3. About two-fifths.
    4. A little over one-half.

27. The term "labor productivity" is defined by economists to mean the:
    1. total quantity of goods and services that workers produce.
    2. average number of hours in the work week.
    3. total output of goods and services divided by total number of man-hours worked.
    4. quantity of goods that workers can produce without the aid of machinery and equipment.

28. In peacetime, the level of unemployment for the nation generally is greater when:
    1. total spending on goods and services in the economy is too high.
    2. there is rapid inflation.
    3. total spending on goods and services in the economy is too low.
    4. Personal Income is rising rapidly.

29. According to studies of the attitudes that American workers have toward their jobs, which one of the following statements is least supported by the findings?
    1. Workers feel that their jobs do influence their choice of friends and social life.
    2. Workers consider the amount of pay to be by far the most important factor in their job.
    3. Workers feel that the reason they are paid is because they are making a contribution to production.
    4. Workers feel that their job affects their whole style of life.

30. Automation appeals to many employers because it promises to:
    1. decrease the variety of goods produced.
    2. increase the number of job opportunities for workers.
    3. increase the tax revenues of state and local government.
    4. increase profits by lowering production costs.

31. Which one of the following is the best explanation or illustration of "real income"?
    1. Actual number of dollars that a worker earns from his job.
    2. Wage-and-salary income after payment of federal income taxes.
    3. The quantity of goods and services that a person can purchase with the dollars he earns.
    4. The standard of living that a family gets used to.

32. Education that increases the knowledge and skills of workers, will usually lead to:
    1. higher costs of production.
    2. greater production per man-hour worked.
    3. higher prices for goods and services.
    4. an increase in the supply of unskilled workers.

33. Forecasts of the amount of leisure time that will be available to workers by 1980 indicate that leisure time will:
    1. decrease a great deal.
    2. decrease slightly.
    3. stay about the same.
    4. increase slightly.

34. Many people would argue that school teachers are far more valuable to the economy than major league baseball players. Yet, many ball players are paid more than teachers. Which of the following is the best explanation for the differences in salaries between the two groups?
    1. Ball players are really entertainers rather than producers.
    2. The job of a major league ball player requires more college education than teaching requires.
    3. There are fewer major league ball players than teachers.
    4. Major league ball players are scarcer relative to the demand for their services than are teachers.

35. Mr. J. C. Sharp, a college-educated business executive, worked as a garbage man for a month as an experiment. He decided that he would not like the job on a permanent basis even if it paid more than his executive salary. According to psychologists, which one of the following reasons would best explain why he would not find the work satisfying?
    1. He does not have any employees to boss around.
    2. Collecting garbage does not challenge him to make use of his special abilities, training, and experience.
    3. He had to take his thirty-minute lunch break when the driver of the garbage truck told him to eat.
    4. Some people throw broken glass in the garbage and this is dangerous for the garbage collectors.

36. The number of years of schooling that the average (median) American worker has completed is:
    1. 6 years.
    2. 8 years.
    3. 10 years.
    4. 12 years.

---

37. The demand for carpenters is most likely to increase when:
    1. incomes of potential home buyers rise.
    2. costs of home construction increase.
    3. the unemployment rate goes up.
    4. the price of lumber increases.

38. Some economic activities yield benefits that go almost entirely to a single individual, such as a haircut you purchase from a barber. In other cases, society-as-a-whole benefits from an activity, such as maintaining a strong military force for national defense. Which one of the following is the best illustration of a benefit that goes to society-as-a-whole rather than just to a particular individual?
    1. As a result of taking a high school course in auto mechanics, you are able to repair your own car.
    2. After graduating from college last June, you are hired as an odds-maker at the local race track.
    3. Free public schools make it possible for you to improve your general communications and arithmetic skills.
    4. You increase your chances of getting a higher salary by taking a course in shorthand.

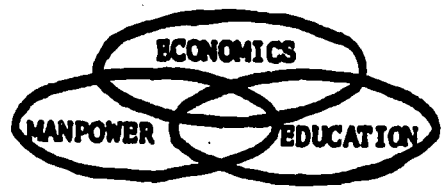
39. Which one of the following combinations of characteristics would probably increase the number of full-time job opportunities available to you?
    1. One year of college, having general job skills, no employment experience, will not move out of city to get a job.
    2. High school graduate, trained as a tool and die maker, with employment experience, willingness to move out of state to get a job.
    3. High school graduate, skilled as a farm equipment operator, no employment experience, will not move out of the state to get a job.
    4. Elementary school graduate, possession of general job skills, employment experience, will move to a nearby city to get a job.

40. Look at the (imaginary) statistics in the table, and pick the year when the Slobovian economy came closest to achieving the goals of full employment, growth in output, and stable prices.

Year	Gross National Product (billions) of dollars	Labor force (millions)	Employment (millions)	Consumer Price Index
1961	305.4	62.1	54.7	114.0
1962	306.2	63.2	53.1	117.4
1963	320.1	64.3	62.8	118.1
1964	333.6	66.7	63.7	123.4

    1. 1961.
    2. 1962.
    3. 1963.
    4. 1964.

Appendix B-2
SMETU



MANPOWER ECONOMICS

TEST OF UNDERSTANDING

(SMETU)

Instructions

This is a 17-item test of what you know about the world of work -- including occupational information, job trends, operation of the manpower market, and various aspects of employment.

As you carefully read each question, choose the ONE best answer and blacken the space on the answer sheet that corresponds to the best answer. Please mark a response for every question, even if you aren't sure you know the correct answer.

Your performance on this test will be carefully evaluated, and we urge you to make the best score you can.

SUBSET OF MANPOWER AND ECONOMIC UNDERSTANDING

1. Studies by sociologists show that in the United States a person's social status is:
   1. entirely unrelated to his job.
   2. very closely related to his job.
   3. related to his job only in small towns.
   4. related to his job only in large cities.

2. Occupational skills that are likely to be most useful and valuable to a worker (over the next 20 or 30 years) are:
   1. skills that are highly specialized to a particular job.
   2. general communications skills such as reading, writing, and working with other people, that can be transferred to different kinds of jobs.
   3. such practical skills as knowing how to operate a drill press or lathe or a hair-drying maching in a beauty shop.
   4. skills in using standard calculating equipment to solve routine problems in business finance.

3. Which of the following jobs is usually performed by a technician?
   1. Doing original research in nuclear physics at a university laboratory.
   2. Tightening bolts on an automobile as it moves down the assembly line.
   3. Correcting a worker who has made errors on his production line job.
   4. Checking blood specimens in a hospital for signs of disease.

4. If you were a recent high school graduate (or dropout) and wanted help in finding a job, which one of the following agencies would generally be the best place to go?
   1. Regional office of the U. S. Department of Labor.
   2. Nearest Job Corps Training Center.
   3. Chamber of Commerce in your city.
   4. Local office of Ohio Bureau of Employment Services.

5. Between 1970 and 1980 employment in the nation will probably increase most in which one of the following industry groups?
   1. Wholesale and retail trade.
   2. Manufacturing.
   3. Agriculture.
   4. Mining.

6. According to behavioral science studies, which one of the following workers is likely to have the most self-respect and feeling of personal worth?
   1. Herman Jones, a man who is continuously successful on his job.
   2. "Hoop" Thompson, a former junior college basketball star who now works on a car wash line.
   3. Miss Veronica Green, 30-year-old secretary in a typing pool, who was selected Homecoming Queen in her senior year of high school.
   4. John Andrews, who gets the highest salary.

7. Industrial studies show that low worker morale on an assembly line is most likely to result when the:
   1. workers go to different churches.
   2. foreman insists that each man follow the company policy of wearing his safety helmet.
   3. workers all belong to the same union.
   4. foreman doesn't allow workers to talk to one another.

8. Which of the following jobs usually requires the most years of training?
   1. Automobile assembly-line worker.
   2. Department store sales clerk.
   3. Waitress.
   4. Journeyman plumber.

9. The total number of job opportunities available in 1980 will be greatest for:
   1. coal miners.
   2. elementary school teachers.
   3. journeyman electricians
   4. airline stewardesses.

10. Wages of American workers are high chiefly because:
   1. the government sets wage rates.
   2. the productivity of the American worker is high.
   3. employers believe they have a social responsibility to pay high wages.
   4. most workers belong to strong labor unions.

11. By 1980, women will make up what proportion of the civilian labor force in Ohio?
   1. About one-tenth.
   2. About one-fifth.
   3. About two-fifths.
   4. A little over one-half.

12. The term "labor productivity" is defined by economists to mean the:
   1. total quantity of goods and services that workers produce.
   2. average number of hours in the work week.
   3. total output of goods and services divided by total number of man-hours worked.
   4. quantity of goods that workers can produce without the aid of machinery and equipment.

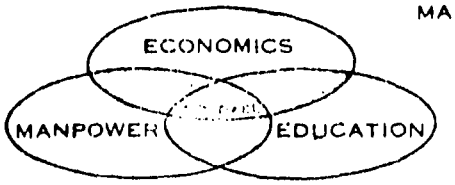
13. According to studies of the attitudes that American workers have toward their jobs, which one of the following statements is least supported by the findings?
   1. Workers feel that their jobs do influence their choice of friends and social life.
   2. Workers consider the amount of pay to be by far the most important factor in their job.
   3. Workers feel that the reason they are paid is because they are making a contribution to production.
   4. Workers feel that their job affects their whole style of life.

14. Education that increases the knowledge and skills of workers, will usually lead to:
    1. higher costs of production.
    2. greater production per man-hour worked.
    3. higher prices for goods and services.
    4. an increase in the supply of unskilled workers.

15. Mr. J. C. Sharp, a college-educated business executive, worked as a garbage man for a month as an experiment. He decided that he would not like the job on a permanent basis even if it paid more than his executive salary. According to psychologists, which one of the following reasons would best explain why he would not find the work satisfying?
    1. He does not have any employees to boss around.
    2. Collecting garbage does not challenge him to make use of his special abilities, training, and experience.
    3. He had to take his thirty-minute lunch break when the driver of the garbage truck told him to eat.
    4. Some people throw broken glass in the garbage and this is dangerous for the garbage collectors.

16. The number of years of schooling that the average (median) American worker has completed is:
    1. 6 years.
    2. 8 years.
    3. 10 years.
    4. 12 years.

17. Which one of the following combinations of characteristics would probably increase the number of full-time job opportunities available to you?
    1. One year of college, having general job skills, no employment experience, will not move out of city to get a job.
    2. High school graduate, trained as a tool and die maker, with employment experience, willingness to move out of state to get a job.
    3. High school graduate, skilled as a farm equipment operator, no employment experience, will not move out of the state to get a job.
    4. Elementary school graduate, possession of general job skills, employment experience, will move to a nearby city to get a job.



Appendix B-3
SOMEA

SURVEY OF

manpower & economic

ATTITUDES

(SOMEA)

The statements on the next four pages of this questionnaire are expressions of attitudes or feelings about a wide variety of topics.

For each of the statements, you are asked to tell whether you Strongly Agree, Agree, Disagree, or Strongly Disagree. If you have no particular feeling about the statement or do not understand the statement, mark Undecided.

This is not a test. There are no right or wrong answers. Your responses will not affect your grades in any way. We want you to indicate your personal opinions about these topics.

Please mark your responses on the separate answer sheet by blackening the space under the letter that corresponds to your response. Please do not write on this test booklet. Please notice that the numbers on the answer sheet read from left to right across the page.

rev. 8-67

Responses				
Strongly Agree	Agree	Undecided	DISagree	Strongly DISagree
A	B	C	D	E

Statements

1. Workers with more schooling deserve higher wages than workers with less schooling.
2. What is good for American workers is good for the American economy.
3. Labor unions deserve credit for improving the life of the working man.
4. Employers would rather hire older people (over 35) than younger people (under 20).
5. A good reason for quitting a job is that you don't like the people you work with.
6. Too much spending by the federal government is the main cause of inflation.
7. A more equal distribution of income than we presently have would be a good thing for America.
8. A married worker with a family should be paid more than a single worker even if both do exactly the same job.
9. Actually, whatever success I have in my work career depends pretty much on factors beyond my control.
10. The sharp reduction in number of people working on farms during the past 20 years is something for the American people to be happy about.

Remember, blacken the space under "A" if you Strongly Agree with the statement, "B" if you Agree, and so forth.

Responses				
Strongly Agree	Agree	Undecided	DISagree	Strongly DISagree
A	B	C	D	E

11. If a person plans his education and training carefully, he is almost sure to succeed in his job career.
12. Most employers are sincerely interested in the welfare of their workers.
13. Automation is good for America and ought to be encouraged.
14. Labor unions are too strong today.
15. If someone gave me all the money I needed, I'd never go to work.

Responses				
Strongly Agree	Agree	Undecided	DISagree	Strongly DISagree
A	B	C	D	E

Statements

16. You can't get a job as a carpenter, plumber, or electrician unless you have "connections" with a labor union.
17. The government should guarantee everyone in the country a decent standard of living.
18. Our country's economic progress is due mainly to the free enterprise system.
19. I wouldn't care what my job was like, as long as the pay was high.
20. The farmer is the person who contributes most to our economic well-being.
21. Business should be controlled and regulated by government to protect the interests of the consumer.
22. All honest work is worthwhile, and therefore all workers deserve respect.
23. Work is a necessary evil.
24. Most American workers are paid just about what they deserve.
25. You can't believe government statistics.
26. The business man is the person who contributes the most to our economic well-being.
27. It's too early to start thinking about my life's work.
28. It will be hard for me to find a good job.
29. The federal government should guarantee everyone a job.
30. Labor unions keep the employer from taking advantage of the worker.
31. Most people who are unemployed are shiftless and lazy.
32. The only reason most people work is for the money.
33. "Taking it easy" on the job is all right as long as you don't get caught by the boss.
34. The proper objective of all economic activity should be to satisfy the wants of consumers.
35. Government employees generally aren't as efficient and hard-working as people who work for private business.

Responses				
Strongly Agree	Agree	Undecided	DISagree	Strongly DISagree
A	B	C	D	E

Statements

36. Luck will play an important role in determining whether I get a good job.
37. Federal government activities in our economic system should be kept to a minimum.
38. High profits are necessary for the survival of our economic system.
39. Labor unions are the main cause of inflation.
40. The major cause of inflation is high profits of business.
41. Poverty will always be a serious problem for millions of families in the U. S.
42. Good working conditions on the job are more important than high pay.
43. Taxes are too high in the United States.
44. The worker is the person who contributes most to our economic well-being.
45. Public schools in Ohio communities generally have enough money to provide a good education for all children.

Responses				
Strongly Agree	Agree	Undecided	DISagree	Strongly DISagree
A	B	C	D	E

Remember, blacken the space under "E" if you Strongly Disagree, and under "A" if you Strongly Agree.

---

46. Men ought to get higher pay than women even if both do exactly the same work.
47. Workers today don't take much pride in their work.
48. The main purpose of our economic system should be to satisfy the needs and wants of the American people.
49. Married women with children under 15 should not hold a job.
50. People who really want to work can always find a job.
51. A worker who is a college graduate ought to be paid at least twice as much as a high school graduate.

Responses				
Strongly Agree	Agree	Undecided	DISagree	Strongly DISagree
A	B	C	D	E

Statements

52. I think my chances of getting a good job will be a lot better than my father had.

53. Young people need a lot more help in finding jobs than they are getting now.

54. The best jobs go to people who have connections and "pull."

55. Women ought to be able to rise just as high in the world as men.

56. Industry today should give special preference in hiring and promotion to negro workers over white workers to make up for past discrimination.

57. I'll need a high school diploma in order to get a good job.

58. The government's national debt is getting so big that our country is in danger of going bankrupt.

59. The Ohio State Employment Service could probably help me find a good job.

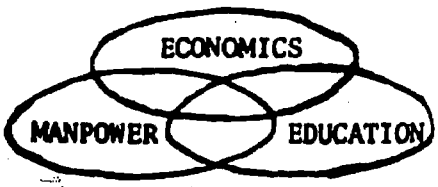
60. Industry should hire high school graduates rather than dropouts.

61. Government economists contribute more to the economic well-being of our country than businessmen do.

62. An understanding of economics would be very helpful to junior high school students in planning their careers.

#

Appendix B-4
SOMEAX



SURVEY OF MANPOWER

AND

ECONOMIC ATTITUDES

(SOMEAX)

Instructions

The statements on the next five pages of this questionnaire are expressions of attitudes or feelings about a variety of topics.

For each statement, you are asked to tell whether you (1) Strongly Agree, (2) Agree, or you are (3) Undecided, or you (4) Disagree, or (5) Strongly Disagree. (Note: You should mark #3 Undecided if you have no particular feeling about the statement or do not understand the statement.)

This is not a test. There are no right or wrong answers. Your responses will not affect your grades or school record in any way. We want you to indicate your personal opinions about these topics.

Please mark your responses on the separate answer sheet by blackening the space under the number that corresponds to your response, using a No. 2 (medium) lead pencil. Notice that the numbers on the answer sheet read from left to right across the page.

Please do not write on this survey booklet.

SURVEY OF MANPOWER AND ECONOMIC ATTITUDES

1. Workers with more schooling deserve higher wages than workers with less schooling.

2. What is good for American workers is good for the American economy.

3. Labor unions deserve credit for improving the life of the working man.

4. Employers would rather hire older people (over 35) than younger people (under 20).

5. To be really successful, I am going to have to give up some present enjoyment for the sake of future goals.

6. A good reason for quitting a job is that you don't like the people you work with.

7. Too much spending by the federal government is the main cause of inflation.

8. A more equal distribution of income than we presently have would be a good thing for America.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1	2	3	4	5

For your responses, remember, blacken the space under "1" if you Strongly Agree with the statement, "2" if you Agree, and so forth.

---

9. A married worker with a family should be paid more than a single worker even if both do exactly the same job.

10. Making personal sacrifices in order to get ahead is not as important today as it used to be.

11. Actually, whatever success I have in my work career depends pretty much on factors beyond my control.

12. The sharp reduction in number of people working on farms during the past 20 years is something for the American people to be happy about.

13. If a person plans his education and training carefully, he is almost sure to succeed in his job career.

14. Most employers are sincerely interested in the welfare of their workers.

15. Since the future is so uncertain, it is best to get everything you can out of the present.

16. Automation is good for America and ought to be encouraged.

17. Labor unions are too strong today.

18. If someone gave me all the money I needed, I'd never go to work.

19. You can't get a job as a carpenter, plumber, or electrician unless you have "connections" with a labor union.

20. It is better to set goals too low rather than too high.

21. The government should guarantee everyone in the country a decent standard of living.

22. Our country's economic progress is due mainly to the free enterprise system.

23. I wouldn't care what my job was like, as long as the pay was high.

24. The farmer is the person who contributes most to our economic well-being.

25. The world is changing so fast that it really isn't worthwhile to plan as far ahead as twenty years.

26. Business should be controlled and regulated by government to protect the interests of the consumer.

27. All honest work is worthwhile, and therefore all workers deserve respect.

28. Work is a necessary evil.

29. Most American workers are paid just about what they deserve.

30. People would be better off if they spent more time enjoying the present and less time making plans for the future.

31. You can't believe government statistics.

32. The businessman is the person who contributes the most to our economic well-being.

33. It's too early to start thinking about my life's work.

34. It will be hard for me to find a good job.

35. I don't see any real need to start planning my career until after I have finished high school.

36. The federal government should guarantee everyone a job.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1	2	3	4	5

Remember, blacken the space under "5" if you Strongly Disagree, and under "1" if you Strongly Agree.

37. Labor unions keep the employer from taking advantage of the worker.

38. Most people who are unemployed are shiftless and lazy.

39. The only reason most people work is for the money.

40. If necessary, I would go against my parents' wishes in selecting my future life's work.

41. "Taking it easy" on the job is all right as long as you don't get caught by the boss.

42. The proper objective of all economic activity should be to satisfy the wants of consumers.

43. Government employees generally aren't as efficient and hard-working as people who work for private business.

44. Luck will play an important role in determining whether I get a good job.

45. I would rather keep a poor job than move away from my relatives and friends to get a really good one.

46. Federal government activities in our economic system should be kept to a minimum.

47. High profits are necessary for the survival of our economic system.

48. Labor unions are the main cause of inflation.

49. The major cause of inflation is high profits of business.

50. The more time you spend planning your career, the more successful you are likely to be.

51. Poverty will always be a serious problem for millions of families in the U.S.

52. Good working conditions on the job are more important than high pay.

53. Taxes are too high in the United States.

54. The worker is the person who contributes most to our economic well-being.

55. It is better to direct your activities to immediate goals rather than planning and working toward goals which can't be achieved until the distant future.

56. Public schools in Ohio communities generally have enough money to provide a good education for all children.

57. Men ought to get higher pay than women even if both do exactly the same work.

58. Workers today don't take much pride in their work.

59. The main purpose of our economic system should be to satisfy the needs and wants of the American people.

60. Married women with children under 15 should not hold a job.

61. People who really want to work can always find a job.

62. A worker who is a college graduate ought to be paid at least twice as much as a high school graduate.

63. I think my chances of getting a good job will be a lot better than my father had.

64. Young people need a lot more help in finding jobs than they are getting now.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1	2	3	4	5

For your responses, remember, blacken the space under "1" if you Strongly Agree with the statement, "2" if you Agree, and so forth.

---

65. The best jobs go to people who have connections and "pull."

66. Women ought to be able to rise just as high in the world as men.

67. Industry today should give special preference in hiring and promotion to negro workers over white workers to make up for past discrimination.

68. I'll need a high school diploma in order to get a good job.

69. The government's national debt is getting so big that our country is in danger of going bankrupt.

70. The local office of the Ohio Bureau of Employment Services could probably help me find a good job.

71. Industry should hire high school graduates rather than dropouts.

72. Government economists contribute more to the economic well-being of our country than businessmen do.

73. An understanding of economics would be very helpful to junior high school students in planning their careers.

PUPIL PERSONNEL INFORMATION FORM
Ohio University Center for Economic Education, Fall 1967-68

Check: Appendix B-5 PPIF
☐ Instructional Group
☐ Control Group

(For staff use only; not to be filled out by students.)

A. IDENTIFYING DATA:

Name: _____; Sex: ____; Social Security No.: _____

Date of Birth: _____; Race: _____; Grade Level: _____

Address: _____
Street Number Street City Zip Code

School Building: _____

Teacher: _____; Period: _____

B. HOME AND FAMILY BACKGROUND:

	Age	Social Security Number
Father's Name: _____	____	_____
Mother's Name: _____	____	_____
Guardian's Name: _____	____	_____

This child lives with (check one):
a) Both parents _____
b) Father only _____
c) Mother only _____
d) Other (state relationship) _____

If other than (a), please explain: (e.g., parents separated or divorced, father deceased, mother deceased, etc.).

Number of siblings living in household: ____

Parent's Address (if different from pupil's): _____

_____

Education (highest grade completed): Of father _____
Of mother _____
Of guardian _____

Code:
A. less than eight
B. elementary school diploma
C. nine
D. ten
E. eleven
F. high school diploma
G. some college
H. college degree
I. advanced degree (Professional, Master's, Doctor's)

Occupation: Of father _____
Of mother _____
Of guardian _____

Code:
W. White-collar workers
W-1 Professional and Technical
W-2 Managers, Officials, and Proprietors
W-3 Clerical workers
W-4 Sales workers

B. Blue-collar workers
B-1 Craftsmen, foremen
B-2 Operatives
B-3 Nonfarm laborers

S. Service workers
S-1 Service household workers
S-2 Service workers, except private households

F. Farm workers
F-1 Farmers & farm managers
F-2 Farm laborers & foremen

Annual Family-Income Level in 1966:

___(a) Under $4,000
___(b) $4,000-$6,000
___(c) $6,000-$10,000
___(d) Over $10,000

Was this income typical for the family (i.e., same level for 1967, 1965, and 1964?).

Yes ☐ No ☐ If no, indicate which code category and year_____

C. SCHOLASTIC RECORD (Cumulative Point Average):

(a) Junior High School _____
(b) Intermediate Grades 4, 5, 6 _____
Name of Elementary School_____

D. TEST RECORD:

Names of Tests	Forms of Tests	Percentile Rank	Test Norms Used
Intelligence Tests:			
Achievement Tests:			
MD/OAEL Test Scores:			
Attitude Pre-test			
Attitude Post-test			
Understanding Pre-test			
Understanding Post-test			

Other Evaluation:

Date form was completed:_____

By:_____

STUDENT QUESTIONNAIRE
Spring Semester, 1972

Appendix B-6
SQ

A. IDENTIFICATION

Name _____ Sex _____ Social Security # _____

Date of Birth _____ Place of Birth _____

Address _____ Ohio _____
Number and Street City zip code

School _____

What junior high school did you attend? _____
Name of School City

B. FAMILY INFORMATION

1. Please indicate the highest level of schooling that your parents attained: (check ✓)

Father		Mother
____	Less than 8 years	____
____	8 years	____
____	9-11 years	____
____	12 years	____
____	Some College	____
____	4 or more years of College	____

2. What kind of work does your father do? (Indicate occupation, industry, skill level, etc.)

3. If your mother is employed for pay outside the home, what kind of work does she do?

4. What was your family's total income from all sources in 1971? (check one)

____ Under $5,000
____ $5,000 - $7,000
____ $7,000 - $10,000
____ $10,000 - $15,000
____ Over $15,000

C. EDUCATION AND CAREER PLANS

1. What curriculum did you follow in senior high school?

____ Vocational
____ College Preparatory
____ General
____ Other: _____

2. Are you glad you chose this course of study?

____ Yes
____ No

Please comment:

3. Your plans for next year: (please check one)

____ Find a job
____ Enter Armed Forces
____ Community College, Technical or Trade School
____ 4-year College or Universi
____ Really don't know
____ Other (specify at left)

4. When did you decide upon these plans?

____ Within past 5 months
____ I haven't really decided for sure yet
____ These have been my plans for more than 6 months

5. Do you feel that you are well prepared to enter a 2-year college, 4-year college, or some other kind of post-secondary training program?

____ Yes
____ No

Please comment:

6. Do you feel that you are ready to make the change from school to work?

____ Yes
____ No

Please comment:

7. What contacts have you had in planning your work career? (check as many as apply)

____ Parents
____ School counselors
____ Junior Achievement
____ Local office of Ohio Employment Service
____ Armed Forces Recruiter
____ Other (specify at left)

8. Describe these contacts, i.e., were they helpful and how?

D. EMPLOYMENT EXPERIENCE

1. Have you ever been employed for pay outside your home? (check as many as apply)

____ Yes, part-time during the school year
____ Yes, full-time during the summer
____ Yes, part-time during the summer
____ Yes, full-time during Christmas, spring vacation, etc.
____ Other (specify at left)
____ No, not at all

2. Please indicate what kinds of jobs you have held and the length of time you held each one.

	Type of work	Length of time
Job # 1 --		
Job # 2 --		
Job # 3 --		

3. Who helped you find your job (or jobs)? (check as many as apply)

____ Found it myself
____ Parents
____ Friends
____ Local office of Ohio Employment Service
____ Other (specify at left)

4. During the past 4 years, how many hours in total have you worked for pay?

____ Less than 250 hours
____ 300-900 hours
____ More than 1000 hours

(For example: 10 weeks of full-time summer employment at 40 hours per week equals 400 hours; or working part-time 6 hours per week during a 40-week school year equals 240 hours.)

5. Please try to recall the hourly rates of pay you received on various jobs.

What was the lowest hourly pay? _____ In what year? _____
What was the highest hourly pay? _____ In what year? _____
What was your most recent hourly wage? _____ In what year? _____

6. Have you ever joined a labor union or paid dues to a labor union?

____ Yes
____ No

Please describe your experience with unions and comment on your feelings about unions:

7. Please comment in general on the feelings you have about employers:

8. Do you think your work experience has been valuable to you?

____ Yes
____ No

Why, or why not?

9. How satisfied were you with your employment experience? (check as many as apply)

____ I didn't like my boss
____ The work was very boring
____ The work really wasn't significant
____ Other (specify)_____
_____
_____

____ I enjoyed the work
____ I learned a lot about the world of work
____ That's not the kind of work I want for my career
____ It was easy to get along with my fellow workers
____ The pay was good
____ The pay was insufficient

E. OCCUPATIONAL ASPIRATIONS

1. Five years from now (1977), which income group would you realistically like to be in? (NOTE: In 1971, earnings for full-time, year-round male workers, age 20-24, averaged $6,800; the top 20% of men in this age group earned about $10,000 a year. Female workers earned an average of $5,000 a year; the top 20% of young women earned about $7,000 a year.

____ Top 20%
____ Middle income group
____ Below average

Ten years from now (1982)

____ Top 20%
____ Middle income group
____ Below average

Twenty years from now (1992)

____ Top 20%
____ Middle income group
____ Below average

2. a) Five years from now, where do you expect to be in your career development?

____ Stuck with a dead-end job
____ Making some progress
____ Advancing rapidly

b) Ten years from now

____ Stuck with a dead-end job
____ Making some progress
____ Advancing rapidly

c) Twenty years from now where do you feel you will be in terms of your career goals?

____ Frustrated and unhappy
____ Content with whatever situation exists
____ Still striving and hopeful
____ Where I had hoped to be
____ Really can't predict

3. How do you expect <u>your</u> career success to compare with the success that your <u>father</u> has had (and mother, too, if she has been employed)?

____ About the same
____ Mine will be more successful
____ Mine will be less successful
____ Other (specify at left)

4. What benefits do you expect to get from your work career over the next twenty years? (Consider <u>all kinds</u> of possible benefits, both financial and non-financial.)

F. EXPERIMENTAL MANPOWER ECONOMICS COURSE

1. When you were in the 8th grade (1967-68), did you take the experimental economics course called "Manpower Development: Opportunities in American Economic Life"?

____ Yes
____ No
____ Don't remember

2. If yes, do you remember how you felt about the course at the time you took it? (check one) "I thought it was:"

____ Outstanding
____ Above average
____ Average
____ Below average
____ Poor

3. Compared with other courses currently offered in junior high, do you now think that this would be a worthwhile course for all 8th graders in your community to take?

____ Yes, very definitely
____ Yes, I suppose so
____ No, it isn't that valuable
____ No, definitely not, it is a waste of time

4. Test results have shown that the experimental economics course that students took in 1967-68 had significant effects on their understanding and attitudes.

a) Do you personally feel that the course has had significant effects on your own actual behavior, such as your success in school, employment experience, career planning, etc.? ____ Yes ____ No

Please comment:

b) Do you feel that the course had significant effects on the behavior of other students who took the course? ____ Yes ____ No ____ I don't know

Please comment:

G. OTHER ECONOMICS COURSES

1. Apart from the experimental course mentioned above, have you ever been enrolled in any other economics course? ____ Yes ____ No

2. If yes, please tell where and when you took it:

3. Please describe the course in terms of its length, subject matter, who taught it, and so forth:

#

Thank you.

LANCASTER CITY SCHOOLS

Information for SPIF

Appendix B-7
School Records

A-1. NAME _____ A-5. Race _____

A-9. Took MEE _____NO/ _____YES A-10. Junior High _____

A-11. Teacher _____

B-1. Father's Name _____ B-2. Mother's Name _____

B-3. Guardian _____

C-1. Diploma (June '72) _____YES/ _____NO

C-2. If no, why not? _____

C-3. Point Average _____Senior High; Rank _____ of _____

_____Junior High

C-4. Evaluation (Teachers) (Excellent, Good, Fair or Poor)

	10th	11th	12th		10th	11th	12th
Attitude				Initiative			
Cooperation				Leadership			
Dependability				Self-Control			
Industry				Soc. Adj.			

C-5. Scholastic Awards and Honors:

C-6. School Attendance: _____9; _____10; _____11; _____12

C-7. Extra-curricular activities:

D. TEST RECORD

1. Intelligence Tests

Test _____ Year _____ P.R. _____ Comments _____

Test _____ Year _____ P.R. _____ Comments _____

2. College Entrance Tests

Test _____ Year _____ Scores _____

Test _____ Year _____ Scores _____

3. Aptitude Test

Test _____ Year _____ Scores _____

4. Grade in Senior Economics _____

Grade in Sophomore Economics _____

E-2. Summary of Counseling Contacts:

M.E.E. FOLLOW-UP STUDY/ STUDENT PERSONNEL INFORMATION FORM (SPIF)

Appendix B-8
SPIF

A. Student Identification

/ / / / / / Computer Identification

(1) Name _____ (2) Sex ___ (3) Social Security # _____

(4) Date of Birth _____ (5) Birth Place _____ (6) Race _____
City State

(7) Address _____ Ohio _____ (8) Phone _____
Street No. Street City zip

(9) High School _____
Name City

(10) Took MEE ___No/___Yes [___Fall '67-68/___Other (specify)_____]

(11) Junior High School _____ (12) Teacher _____ Period ___

B. Home and Family Data (May 1972)

(1) Father's Name _____ (2) Mother's Name _____

(3) If student lives with other than both parents explain living arrangements; include name of guardian if appropriate.

(4) Education of parents. Indicate highest level of schooling that each parent attained; cross out Father and write Guardian if appropriate.

Father		Mother
_____	Less than 8 years	_____
_____	8 years	_____
_____	9-11 years	_____
_____	12 years	_____
_____	Some College	_____
_____	4 or more years of College	_____

(5) Occupation of Father _____ (6) Occupation of Mother _____
(cross out Father and write Guardian if appropriate)

CODE: In blanks above, write appropriate letter-number combination from following list.

WHITE COLLAR WORKERS
W-1 Professional and Technical
W-2 Managers, Officials, Proprietors
W-3 Clerical workers

BLUE COLLAR WORKERS
B-1 Craftsmen and Foremen
B-2 Semi-skilled operatives
B-3 Unskilled (nonfarm) workers

SERVICE WORKERS
S-1 Private household workers
S-2 Service workers (other)

FARM WORKERS
F-1 Farmers and Farm managers
F-2 Farm laborers and Foremen

(7) Total family income from all sources. (Check one.)

in 1971	in 1966
___Under $5,000	___Under $4,000
___$5,000-$7,000	___$4,000-$6,000
___$7,000-$10,000	___$6,000-$10,000
___$10,000-$15,000	___Over $10,000
___Over $15,000	

C. School Record

(1) Did the student receive a high school diploma in June 1972? ___Yes/___No

(2) If no, why not? (dropped out, moved from school district, etc., include appropriate dates)

(3) Cumulative Grade Point Average.

_____Senior High School; Rank in graduating class_____of_____

_____Junior High School

(4) Evaluation by teachers of student's personal traits.

	10th Grade	11th Grade	12th Grade
Attitude			
Cooperation			
Dependability			
Industry			
Initiative			
Leadership			
Self-control			
Social Adjustment			

(5) What curriculum did student follow in senior high school?

___ Vocational ___ College Preparatory

___ General ___ Other_____

(6) Did student feel that this curriculum was satisfactory? ___Yes/___No
Comments:

(7) Scholastic Awards and Honors:

(8) School Attendance (number of days absent, and comments).

___ 9th Grade ___ 11th Grade

___ 10th Grade ___ 12th Grade

(9) Extra-curricular activities, especially vocationally oriented clubs and organizations such as Future Teachers, Future Farmers, School newspaper, Junior Achievement, etc.

D. Test Record

	Name of Test	Year	Percentile Rank	Comments
(1) Intelligence Tests:				
(2) College Entrance Exams:				
(3) GATB or Similar Vocational Aptitude Tests:				
(4) M.E.E. Test Scores:	METU Pre-test METU Post-test METU Follow-up			
	SOMEA Pre-test SOMEA Post-test SOMEA Follow-up			
(5) Other Evaluations:				

E. Post-Secondary Plans and Counseling Contacts

(1) Summary of counseling contacts including nature of the contacts (discipline, career planning, occupational information, college planning, etc.), frequency, counselor evaluations concerning student's maturity, reliability, behavior directed toward occupational goals, occupational aspirations, etc., and outcomes, if any.

a) Check one or more type of contact student reports re career planning.

_____ Parents
_____ School Counselors
_____ Junior Achievement
_____ Other_____
_____ Local Office of Ohio Employment Service
_____ Armed Forces Recruiter

b) Student's description of contacts: frequency, helpfulness, outcomes.

c) Counselor comments (See E-1 instructions).

(2) Student's plans following high school (as of May 1972).

___ Find a job
___ Enter Armed Forces
___ Community College, Technical or Trade School
___ 4-year College or University
___ Really don't know
___ Other_____

(3) When had student decided upon these plans?

___ Within past 5 months
___ Had been planned for more than 6 months
___ Hadn't really decided for sure yet

(4) Did student feel well prepared to pursue post-secondary training (May 1972)?

___Yes/___No

(5) Did student feel he was ready to make the transition from school to work?

___Yes/___No

(6) Student's expectations for his future career success compared to his parents'.

___ About the same
___ More successful
___ Less successful
___ Other_____

(7) Types of benefits student expects to receive from his career.

___ Mentioned only monetary
___ Mentioned only non-financial benefits
___ Mentioned both
___ Left blank

Comments:

F. Employment Experience

(1) Did student receive a work permit from school? ___Yes/___No

Dates:

Comments:

(2) Has student ever been employed for pay outside the home?

___Yes, part-time during school year
___Yes, part-time during summer
___No, not at all
___Other_____
___Yes, full-time during summer
___Yes, full-time during spring vacation, Christmas, etc.

(3) Kinds of jobs held and length of time each was held.

	Name of job & description	Length of time
Job #1		
Job #2		
Job #3		

(4) Who helped student to find job(s)?

___Found it himself
___Friends
___Parents
___Local Office of Ohio Employment Service
___Other_____

(5) Between June 1968 and May 1972 number of hours in total that student worked for pay.

___Less than 250 ___300-900 ___More than 1000

(6) Hourly rates of pay.

	Year
Lowest $	
Highest $	
Most recent $	

(7) Student's experience with and feelings about labor unions.

(8) Student's comments about employers.

(9) Did student feel his work experience was valuable? ___Yes/___No

(10) Was student satisfied with his employment experience? (Check one or more.)

___Didn't like boss
___Found work boring
___Did not find work to be significant
___Found it easy to get along with fellow workers
___Pay was good
___Pay was insufficient
___Enjoyed the work
___Learned a lot about the world of work
___Not the kind of work student wants for a career
___Other_____

G. Employer Evaluation of Student

Identify employer and industry from which evaluation is obtained (e.g., name of firm, type of business and product, only employer or longest or most recent, etc.).

(1) Employer's appraisal of student's capabilities and skills.

___Excellent ___Fair Comments:
___Good ___Poor

(2) Was student's work effort satisfactory? ___Yes/___No

(3) If no, explain.

(4) Did the student seem to understand his role as an employee and what was expected of him in that role? ___Yes/___No

(5) If no, please comment.

(6) Would employer rehire (or continue to employ) this student on a permanent, career basis? ___Yes/___No

(7) Other comments reflecting employer's appraisal.

H. MEE and Other Economics Courses

(1) Took MEE. ___Yes/___No

(2) Did student recall having taken MEE in Student Questionnaire (SQ) response?

___Yes/___No/___Did not remember

(3) Student's SQ response to how he remembered feeling about MEE.

___ Outstanding
___ Above Average
___ Average
___ Below Average
___ Poor

(4) Student's judgement concerning the value of having all 8th graders in the community take MEE.

___Yes, very definitely should take
___Yes, should take
___No, MEE is not that valuable
___No, definitely not, MEE is a waste of time

(5) Did student feel that MEE had effects on his own actual behavior, such as success in school, employment experience, career planning, etc.?

___Yes/___No

Comments:

(6) Apart from MEE, has student taken other economics courses? ___Yes/___No

(7) If yes, indicate which year and describe the course in terms of length, subject matter, who taught it, etc.

Appendix B-9
Telephone Survey Form

Subject Group:____________

Page_____

STUDENT'S NAME	ADDRESS IN MAY 1972	PARENT'S NAME	JUNE 1972 Grad	TELEPHONE	LABOR FORCE STATUS (Week of Feb 5-9, 1973)		
					ARMED FORCES	FULL-TIME STUDENT	OTHER (Include employed)
 new married name	 new address			 new tel.			

BEST COPY AVAILABLE

A Follow-up Study of the Lancaster High School Class of 1972

Appendix B-10
LFQ/S

Done Cooperatively by the Lancaster City Schools
and the Colorado State University Center for Economic Education

INSTRUCTIONS

This questionnaire is designed for you to complete by yourself. Please read each question carefully before answering. Place an X beside each answer you choose in the box provided. Please check only one answer wherever there is a choice. Some questions require a written response. Usually only a word or phrase is necessary to answer these questions. Please be brief but complete, and print your response in the space provided.

When you have finished answering every question that applies to you, place the completed questionnaire in the enclosed self-addressed envelope and drop it in the mail as soon as possible. The information you provide will be treated confidentially.

Thank you for helping us find out about your educational plans. This information will be useful for improving our efforts to help young people plan and prepare for post-secondary education and their future work careers.

For CSU/CFEE staff use:
ID _____

I. BACKGROUND INFORMATION

1. Name _____

2. Social Security Number _____

3. Present Address _____
number street city state zip

4. Permanent Home Address _____
number street city state zip

5. What is your current marital status?

a) ☐ single
b) ☐ married
c) ☐ separated, widowed, or divorced

* * * * * * * * * * * * * * *

Throughout the questionnaire, the questions refer to your activities and plans during the week of February 5-11, 1973 (Monday thru Sunday). Please answer each question based upon what you were doing and planning as of that week. This is so there will be a single time period to which everyone refers, regardless of when the questionnaire is completed.

II. CURRENT EDUCATIONAL STATUS. (NOTE: Information obtained from a preliminary survey conducted the week of February 5 indicated that you are currently enrolled as a full-time student. The questions in this form are based on that premise. If you were not actually enrolled as a full-time student during the week of February 5-11 and therefore mark "no" to the following question, will you kindly explain the apparent inconsistency between our preliminary information and your response on this questionnaire? Thank you.

1. During the week of February 5-11, 1973 were you enrolled as a full-time student?

a) ☐ yes b) ☐ no

If no, please explain in space below and return questionnaire in envelope provided.

2. If yes, please check the type of education or training program you are enrolled in.
   a) ☐ four-year college or university (name of school _____)
   b) ☐ community or junior college (name: _____)
   c) ☐ area vocational-technical school (name: _____)
   d) ☐ private business or trade school (name: _____)
   e) ☐ other (please specify) _____)

3. How much post-secondery education had you completed as of February 11, 1973?
   a) ☐ one quarter b) ☐ one semester c) ☐ no. of weeks: _____

4. What was your major area of study? (for example; Chemistry, Sociology, Dental Hygienist, Secretarial, etc.)

5. What degree, if any, are you seeking?
   a) ☐ B.A. or B.S.
   b) ☐ A.A.
   c) ☐ State Certification License (specify) _____
   d) ☐ other (specify) _____

6. Which one of the following factors most influenced your personal decision to choose this course of study?
   a) ☐ advice of parents
   b) ☐ advice of school counselor or teacher
   c) ☐ tradition in the family
   d) ☐ work experience in this field
   e) ☐ other (please explain) _____

7. When do you expect to complete your prorram of study?

8. What specific occupation do you plan to use your education to pursue?

9. When did you start the educational program in which you were enrolled during the survey week (February 5-11, 1973)?
   _____ month _____ year

10. A. Have you explored your chosen occupation to determine what your employment prospects will be in that field following graduation?
    a) ☐ yes b) ☐ no

    B. If yes, what have you found out?
    a) ☐ there will be an excess of available jobs and I will have no trouble finding employment
    b) ☐ the supply of jobs in this field will just about equal the number of graduates applying for them
    c) ☐ there will probably be somewhat fewer jobs in this field than there are graduates applying for them
    d) ☐ there is little chance that I will be able to find a job in my field

II. A. Is there a special program at the school you are now attending whose purpose is to give you career information about your field of study?

a) ☐ yes b) ☐ no

B. If yes, please describe what kind of program it is.

III. WORK EXPERIENCE

1. During the week of February 5-11, 1973 did you hold a part-time job while going to school?

a) ☐ yes b) ☐ no

2. If yes, please answer the following questions:

A. How many hours in total did you work at the job during the week of February 5-11?

a) ☐ less than 6 hours c) ☐ 13-20 hours

b) ☐ 6-12 hours d) ☐ more than 20 hours

B. What rate of pay did you earn during the survey week (February 5-11)?

a) ☐ less than $1.00/hour d) ☐ $2.01 to $2.50/hour

b) ☐ $1.00 to $1.60/hour e) ☐ $2.51 to $3.00/hour

c) ☐ $1.61 to $2.00/hour f) ☐ more than $3.00/hour

C. What type of job did you work at? (include job title and specific duties)

D. When did you start working at the job? _____ month _____ year

E. How did you obtain the job? (please explain)

3. If you made any response to A, B, or C above, please indicate if some of the answers were <u>not</u> representative of your <u>usual</u> work arrangements? (hours, pay, work duties)

4. Please describe your work experience, if any, during the period from June 1972 until you began the post-secondary educational program you were enrolled in during the survey week (February 5-11, 1973).

5. Please summarize the most worthwhile part-time and summer jobs you held while you were still in high school. (Give dates, job titles, wage rates, skill development, etc.)

IV. HIGH SCHOOL PREPARATION

1. Please describe aspects of your junior and senior high school experience which you personally feel have been most valuable to you in preparing for your expected future career. (For example: vocational program, office skills, manpower economics course, guidance counseling, extra curricular activities, etc.)

2. Please comment on any shortcomings of your junior and senior high school experience which you feel would have helped you better plan and prepare for your expected future career.

3. If you have any other experiences or opinions that you would like to express regarding your high school preparation for post-secondary education or direct entry into the world of work, please write them below. (Continue on back of this page if necessary.)

Thank You! If you would like to receive a summary of the findings of this study which is to be completed in about a year, please indicate below.

☐ Yes, I would like to receive a summary of findings.

CSU/rld/2-73

Appendix B-II
LFQ/W

Transition from School to Work:

A Follow-up Study of Former Lancaster High School Students

Done Cooperatively by the Lancaster City Schools
and the Colorado State University Center for Economic Education

INSTRUCTIONS

This questionnaire is designed for you to complete by yourself. Please read each question carefully before answering. Place an X beside each answer you choose in the box provided. A few questions require a written response. Usually only a word or phrase is necessary to answer these questions. Please print your response in the space provided.

When you have finished answering every question which applies to you, place the completed questionnaire in the enclosed self-addressed envelope and drop it in the mail as soon as possible. The information you have provided us will be treated confidentially.

Thank you again for helping us in this effort to improve the usefulness of school curricula in smoothing the school-to-work transition for young people.

For CSU/CFEE staff use:
ID _____
_____
_____

I. BACKGROUND INFORMATION

1. Name _____

2. Address _____
number street city state zip

3. Phone _____ 4. Social Security Number _____

II. CURRENT LABOR FORCE STATUS.

Throughout this section on Current Labor Force Status the questions refer to the week of February 5-11, 1973 (Monday thru Sunday). Please answer each question based upon what you were doing that week. This is so there will be a single time period to which everyone refers, regardless of when the questionnaire is completed.

1. What was your main activity during the week of February 5-11, 1973?

a) ☐ working full-time
b) ☐ working part-time (less than 35 hours during the week)
c) ☐ looking for work (how long have you been looking? _____)
d) ☐ unable to work (please state reason) _____
e) ☐ not interested in outside employment (please state reason) _____
_____

If you checked either (a) or (b) in #1 above, please complete questions #2 through #10 on the following pages.

2. A. What type of job did you work at during the week of February 5-11, 1973? NOTE--If you held more than one job during that week, consider only your primary job.

WHITE COLLAR WORKER

a) ☐ Professional or Technical
b) ☐ Manager, Official, Proprietor
c) ☐ Clerical worker

BLUE COLLAR WORKER

f) ☐ Craftsman or Foreman
g) ☐ Semi-skilled operative
h) ☐ Unskilled worker (non-farm)

SERVICE WORKER

d) ☐ Private household worker (outside your own home)
e) ☐ Other service worker

FARM WORKER

i) ☐ Farmer or Farm manager
j) ☐ Farm laborer or Foreman

B. For whom did you work? (Name of company, business organization, or other employer; and address)

C. What was your job title?

D. What were your specific duties on the job?

3. What rate of pay did you earn working at the job you described above?

a) ☐ less than $1.60/hour
b) ☐ $1.60 to $2.00/hour
c) ☐ $2.01 to $2.50/hour
d) ☐ $2.51 to $3.00/hour
e) ☐ $3.01 to $4.00/hour
f) ☐ more than $4.00/hour

4. A. How many hours in total did you work at the job you described in question #2?

a) ☐ less than 10 hours
b) ☐ 11-15 hours
c) ☐ 16-25 hours
d) ☐ 26-35 hours
e) ☐ 36-40 hours
f) ☐ more than 40 hours

B. Do you expect this work load to be typical for you in the future?

a) ☐ yes
b) ☐ no

C. If you answered "no" above, what do you expect to be a typical work load for you?

5. What was your total take-home pay for the week of February 5-11 from <u>all</u> jobs you worked at?

a) ☐ less than $20
b) ☐ $20 to $39
c) ☐ $40 to $59
d) ☐ $60 to $79
e) ☐ $80 to $100
f) ☐ more than $100

6. During 1973 what <u>total</u> income for the entire year do you realistically expect to earn?

a) ☐ less than $2,000
b) ☐ $2,000 to $2,999
c) ☐ $3,000 to $3,999
d) ☐ $4,000 to $4,999
e) ☐ $5,000 to $5,999
f) ☐ $6,000 to $7,499
g) ☐ $7,500 to $10,000
h) ☐ more than $10,000

7. How long have you been working at the job you held during the week of February 5-11, 1973?

a) ☐ less than one month
b) ☐ 1-3 months
c) ☐ 4-6 months
d) ☐ 7-9 months
e) ☐ more than 9 months

8. How did you locate this job?

a) ☐ checked directly with employer
b) ☐ heard about it from a friend
c) ☐ saw advertisement in newspaper or television or heard it on radio
d) ☐ through parents or other relatives
e) ☐ local office of Ohio Bureau of Employment Services
f) ☐ private employment agency
g) ☐ high school vocational program
h) ☐ other, (specify) _____

9. Are you satisfied with this job? (check as many as apply)

a) ☐ yes, very satisfied, I enjoy my work
b) ☐ yes, reasonably satisfied
c) ☐ no, I am not paid enough for the amount of work I do
d) ☐ no, the job is boring
e) ☐ no, there is no hope for advancement
f) ☐ other (please specify) _____

10. If you held more than one job at the same time during the week of February 5-11, check here ☐ and provide the following information about your second job: Type of work, employer, specific duties, hourly pay, hours worked, how long you had held the second job, how you obtained the second job, and how satisfied you are with the job.
(If you need more space to write your answer, please use back of the last page of this questionnaire.)

III. EMPLOYMENT HISTORY

1. How many jobs have you held since June 1, 1972?

a) ☐ none
b) ☐ one job
c) ☐ two jobs
d) ☐ three or more

2. If you checked (a) above, did you ever actively seek employment at any time between June 1, 1972 and February 11, 1973?

a) ☐ yes (please describe how) _____
b) ☐ no (please indicate reasons) _____

3. How many months elasped between June 1, 1972, and the time you obtained your first job lasting one month or longer? (if never employed in that time period, check "d")

a) ☐ less than one month
b) ☐ 2-3 months
c) ☐ 4-6 months
d) ☐ more than 6 months

4. If you did obtain one job or more between June 1, 1972, and February 11, 1973, was the first job you worked at during that period in an area directly related to a vocational program that you took in high school?

   a) ☐ yes (please specify) _____

   b) ☐ no

5. How many total months have you been employed since June 1, 1972?

   a) ☐ none
   b) ☐ 1-3 months
   c) ☐ 4-6 months
   d) ☐ more than 6 months

6. How often have you been unemployed for more than a full week since June 1, 1972?

   a) ☐ never
   b) ☐ only once
   c) ☐ 2-3 times
   d) ☐ 4 or more times

7. During your most recent period of unemployment how long were you out of work?

   a) ☐ less than one month
   b) ☐ 2-3 months
   c) ☐ 4-6 months
   d) ☐ more than 6 months
   e) ☐ never unemployed

8. How long was the longest period that you were unemployed since June 1, 1972?

   a) ☐ less than one month
   b) ☐ 2-3 months
   c) ☐ 4-6 months
   d) ☐ more than 6 months
   e) ☐ never unemployed

9. Since June 1, 1972, how many hours did you work per week on your:

   A. first job:
      a) ☐ less than 20 hours per week
      b) ☐ 20-35 hours/wk.
      c) ☐ more than 35 hours/wk.

   B. longest job:
      a) ☐ less than 20 hours/wk.
      b) ☐ 20-35 hours/wk.
      c) ☐ more than 35 hours/wk.

10. Since June 1, 1972, what have been your hourly earnings on your:

   A. first job
      a) ☐ less than $1.60/hour
      b) ☐ $1.60 to $2.00/hour
      c) ☐ $2.01 to $2.50/hour
      d) ☐ $2.51 to $3.00/hour
      e) ☐ more than $3.00/hour

   B. longest job
      a) ☐ less than $1.60/hour
      b) ☐ $1.60 to $2.00/hour
      c) ☐ $2.01 to $2.50/hour
      d) ☐ $2.51 to $3.00/hour
      e) ☐ more than $3.00/hour

11. Since June 1, 1972, what types of jobs have you held one month or more? (please describe each job, including job title, work duties, and how long you held job)

   Job #1

   Job #2

   Job #3

12. How did you locate these jobs? (put job number from preceding question in box by appropriate letter instead of an X)

a) ☐ checked directly with employer
b) ☐ heard about it from a friend
c) ☐ saw advertisement in newspaper or television or heard it on radio
d) ☐ through parents or other relative
e) ☐ local office of Ohio Bureau of Employment Services
f) ☐ private employment agency
g) ☐ high school vocational program
h) ☐ other (specify) _____

IV. OTHER INFORMATION

1. What was your marital status (as of the survey week, February 5-11)?

a) ☐ single
b) ☐ married
c) ☐ separated, widowed, or divorced

2. Were you a paying member (regular or temporary) of a labor union as of the survey week?

a) ☐ yes, Local # _____, _____ (union name)
b) ☐ no

3. Were you enrolled in school, college, or any other formal educational or training program during the survey week?

a) ☐ yes (describe) _____
b) ☐ no

4. Between June 1, 1972, and February 4, 1973, were you ever enrolled in school, college, or any other educational or training program?

a) ☐ yes (describe) _____
b) ☐ no

5. A. Do you have any plans for continuing your education in the future?

a) ☐ yes b) ☐ no

B. If yes, Part-time? ☐ or Full-time? ☐

C. If yes, what type of program?

a) ☐ four-year college or university
b) ☐ community or junior college
c) ☐ company training school
d) ☐ private business or trade school
e) ☐ correspondence course
f) ☐ vocational/technical institute
g) ☐ combination of above or other (please specify) _____

D. If yes, when are you likely to enroll in the educational program? _____

E. Please explain your decision and timing relative to obtaining additional education or training.

6. If you were not living in Lancaster during the survey week (February 5-11), what is the most important reason you decided to go elsewhere?

   a) ☐ Job offer

   b) ☐ desire to live away from home

   c) ☐ desire of spouse to live elsewhere

   d) ☐ other (please specify) _____

7. Do you feel that you were adequately prepared for entering the world of work?

   a) ☐ yes b) ☐ no

8. If you do not feel you were adequately prepared, please list the reasons why you feel this is so.

   a)

   b)

   c)

9. What do you feel has been the most valuable contribution your education has made to your occupational success thus far in your career?

10. If you have additional information or a personal opinion about your own recent employment experience that you think might be helpful in this follow-up study, please write in this space:

* * *

If you would like to receive a summary of the findings of this study when it is completed in about a year, please indicate below.

☐ Yes, I would like to receive a copy.

THANK YOU!

When you have completed this questionnaire, please place it in the self-addressed envelope and mail it as soon as possible.

APPENDIX C
ADMINISTRATIVE NOTES

This appendix contains a list of persons who worked on the study in Colorado and Ohio, a budget summary, some comments on the research facilities, and a note on future disposition of the research data.

C-1. Project Staff

A total of 10 staff members worked on the study at Colorado State University:

Robert L. Darcy, PRINCIPAL INVESTIGATOR (13% of time, 2/73-2/74)
Professor of Economics, Colorado State University
Douglas D. Sjogren, RESEARCH METHODOLOGIST (9% of time, 2/73-2/74)
Professor of Education, CSU
Maurice C. Bryson, STATISTICAL CONSULTANT (contributed services)
Ass't Professor of Statistics, CSU
Richard V. Kauffman, RESEARCH ASSISTANT (contributed services)
Graduate Student in Economics, CSU
Edward P. Milker, RESEARCH ASSISTANT (½ time, 9/73-2/74)
Graduate Student in Statistics, CSU
Carlos Cappelletti, RESEARCH ASSISTANT (½ time, 2/73-7/73)
Graduate Student in Statistics, CSU
Naomi DiBona, SENIOR RESEARCH TECHNICIAN (part-time, 2/73-2/74)
B.S., Economics
Judith Cefkin, RESEARCH TECHNICIAN (part-time)
Undergraduate Student
Elizabeth Hervey, RESEARCH TECHNICIAN (part-time)
Undergraduate Student
Ann B. Murphey, RESEARCH TECHNICIAN (part-time)
Undergraduate Student

The principal staff at the experimental site in Lancaster, Ohio, included:

Mr. James Brown, LOCAL PROJECT COORDINATOR (part-time)
Guidance Counselor, Lancaster High School, to Principal, General Sherman Junior High School
Mrs. William A. (Barbara) Brown, SUPERVISOR OF TELEPHONE SURVEY (part-time)
Mr. John Watson, INTERVIEWER (part-time)
Guidance Counselor, Lancaster High School

In addition to the above, 10 other Lancaster residents were employed to gather data used in the study.

C-2. Budget Summary

Following is a brief summary of actual project costs (preliminary data):

I.	DIRECT COSTS		
	1) Personnel Costs		
	a) Colorado State University staff (includes keypunching)	$13,214	
	b) Ohio Staff	1,896	
	2) Travel	1,739	
	3) Supplies, Materials, Duplicating (includes Final Report)	610	
	4) Communications (telephone, mail)	101	
	5) Statistical Services (computer time)	530	
	SUBTOTAL, DIRECT COSTS		$18,090
II.	INDIRECT COSTS (64% of on-campus personnel costs except labor payroll)		6,840
III.	TOTAL COSTS (Federal Funds)		$24,930

C-3. Research Facilities and Administrative Cooperation

In general, the research facilities of the Department of Economics and of the University were adequate for the performance of tasks necessary to the investigation. These included office space in the Center for Economic Education; access to CDC 6400 computer, Hewlett-Packard 9810A desk computer, keypunch machines, standard electronic desk calculators, and other office equipment; and consulting services from the University Statistical Laboratory. Administrative staff at the university were highly supportive.

Excellent cooperation was received from the Lancaster Schools staff, including Superintendent Robert Sutton, in planning and carrying out the research.

C-4. Disposition of Research Data

It is recognized that the data stock used in this study -- including data gathered under the Department of Labor grant as well as pre-existing data -- could be utilized in future research. In addition, limited data exist from previous studies for two other Ohio schools -- Zanesville High School and Muskingum Area Joint Vocational School. With the advice and approval of the Department of Labor, efforts will be made to place all of these data (approximately four file drawers) with an appropriate research facility for possible use in related studies.