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ABSTRACT

The 1972 Jet Propulsion Laboratory (JPL) Career Training Program was aimed at placing counselors in actual work situations (as new employees) to enable them to experience that which they must describe to students if they are to do an effective job in career counseling. The overall purpose was to give counselors or teachers and administrators an opportunity to learn about, participate in, and analyze a broad range of professional, technical, skilled, and semiskilled occupations. This program will serve as a model by providing a documented experience to aid schools, business, industry, and professional organizations throughout the country in setting up similar career guidance training programs. The participants worked for six weeks side by side with JPL employees, moving from one work station to another. The participants, working in groups, produced documents summarizing their studies suitable for use in counseling students. The counselors who participated in the program left the lab much more knowledgeable concerning actual job duties and responsibilities, and with a better understanding of entry level skills, job descriptions, and the need for the educator to help create an efficient work force. (WS)

ED 066671

R E P O R T

on

"CAREER GUIDANCE TRAINING"

EDUCATION PROFESSIONS DEVELOPMENT ACT

Project No. 19-64659-EF037-72

La Canada Unified School District

and

Jet Propulsion Laboratory

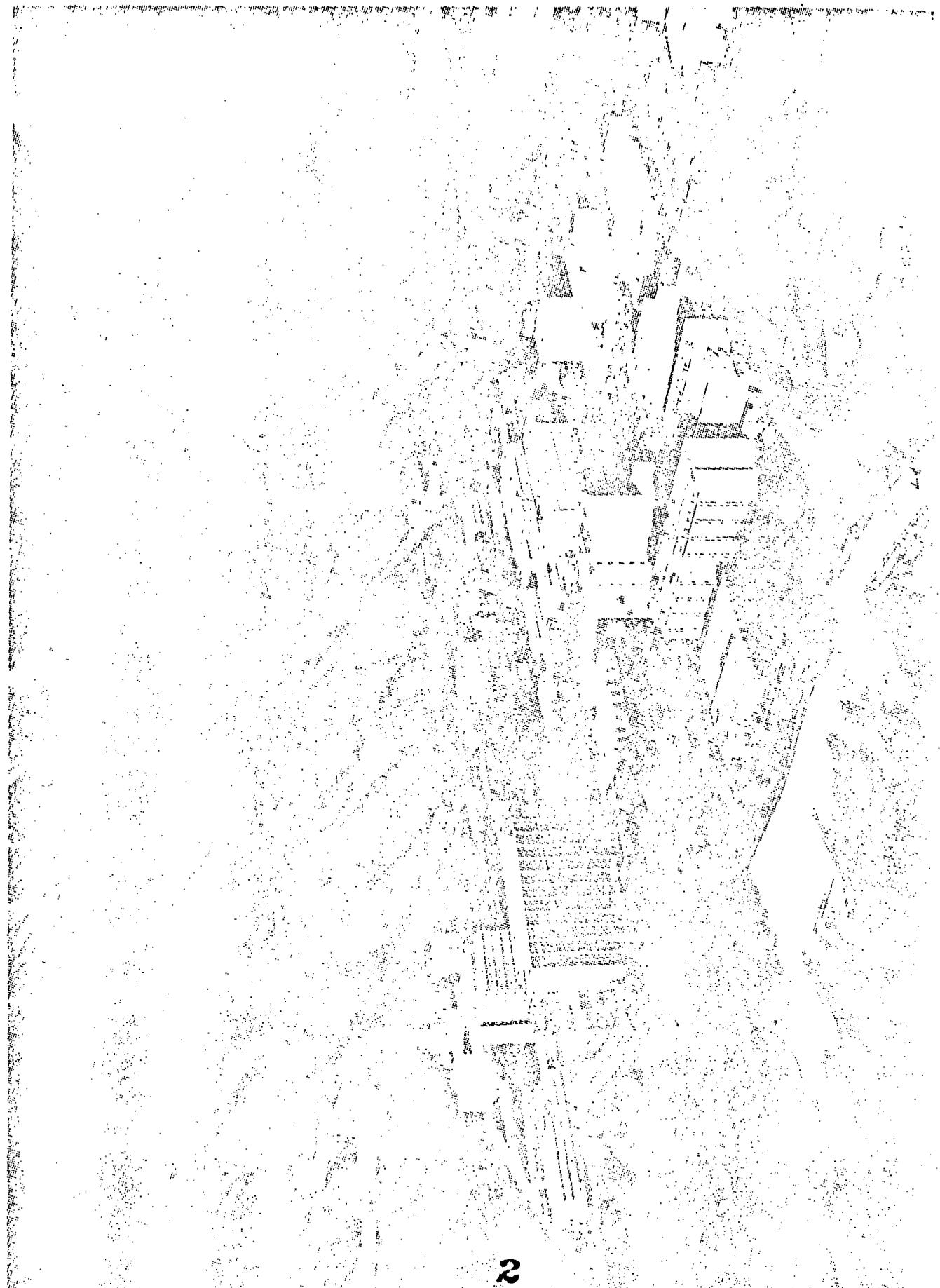
U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
OFFICE OF EDUCATION

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EG 007 303



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SECTION I

"GOALS AND OBJECTIVES"

E.P.D.A. PROJECT - CAREER GUIDANCE TRAINING

GOAL

Place counselors in an actual work situation (as new employees) which will enable them to experience that which they must describe to students if they are to do an effective job in career counseling.

OBJECTIVES

All participants (100%) with 90% accuracy will be able to:

1. Explain the free enterprise system and the responsibilities of the employee.
2. Describe the tasks performed by a clerk typist (minimum of 100 occupational classifications).
3. Describe the attitudes necessary for successful employment.
4. Write an accurate job description.
5. Interpret job requirements for students from a well-written job description.
6. Provide each participating school district with one counselor who has had recent experience in the world of work.
7. Provide improved career guidance for their counselees (average ration 400 students per one counselor).
8. Provide information on career guidance and the world of work for the other counselors at the participating schools, to enable each counselor to improve his career guidance delivery technique.
9. Describe entry level skills for employment for a minimum of 100 different job classifications.
10. Explain the responsibilities of educator, employer, and employee to create a well-trained, effective, national work force.

SECTION II

"SUMMARY OF THE PROJECT"

(Employment Program for Participant)

CAREER GUIDANCE TRAINING

The Pasadena Area high school districts and Pasadena City College in cooperation with Jet Propulsion Laboratory have undertaken a project which placed 16 counselors from the high schools and the college at the Lab for six weeks this summer.

The counselors were rotated through the various departments at the Lab:

Public Affairs

Personnel Employment Training

Material Logistics

Carpentry Shop

Electronics Shop

Paint Shop

Photo Department

Graphic Arts

Printing and Documentation

Environmental Sciences

Tracking Support

SUMMARY OF SUMMER COUNSELOR PROGRAM AT JPL

The need for counselors to update their knowledge of careers for high school students led John Young, Director of Occupational Educational Programs for High Schools in the Pasadena Area, and Gordon Wenger, Manager of Public Educational Services at the Jet Propulsion Lab, Pasadena, to initiate a six week program, funded through Educational Professions Development Act, and held at JPL. Sixteen counselors and nine schools were represented as follows: Arcadia High, Max Cramer, and Jean McIlyar; La Canada High, Ronald Reich and Floyd Honsberger; Muir High, George Smith, Jr.; Pasadena High, Richard Busik; San Marino High, Elizabeth Walker; South Pasadena High, Janet Knupp; Temple City High, Robert Tippy; Pasadena City College, Ed Simpson, Joseph Mathias, John Reynolds, Delmar Heyne, John MacFarlane, Donald DePledge, and Cal State Los Angeles, Marilyn Buckroff. This summer program was designed to allow the participants to observe, inquire and participate in actual job situations.

Areas in which the counselors became involved at JPL were: Public Affairs, Personnel Employment Training, Material Logistics, Plant Engineering, Photography and Graphic Arts, Printing and Documentation, Environmental Sciences and Tracking Support. Each counselor was assigned a different area each week and was guided through the entire organization of each area under the responsibility of the manager of the division concerned. A thorough briefing of the jobs of each section was offered as well as an opportunity to actually take part in experiencing the duties of many of them. In addition, opportunities were afforded each one of the counselors to question the employees about their special backgrounds and job experiences, providing additional information about the world of work, attitudes, educational needs and personal goals which further enriched the program.

As a result it might be said for some of the participants that their philosophy of education was substantially reinforced. An awareness of JPL's diverse occupational opportunities became known as well as the various skill levels. A real acquaintance with the need for personable characteristics in employee-management relationships, an assurance of the need for basic communication skills, as well as a need for continuing education, were made apparent as contacts and experiences were shared.

As a result the counselors who participated in this program left the Lab much more knowledgeable concerning actual job duties and responsibilities, and with a better understanding of entry level skills, job descriptions, and the needs for the educator to help create an efficient work force.

Each counselor will be equipped with a slide-tape career guidance presentation on occupational opportunities, which they helped prepare at the Lab. This presentation will be used at each of the high schools to explain the employment opportunities at JPL.

Only through the complete cooperation of education and industry could a project of this nature be accomplished. Gordon Wenger, of the Public Affairs Office at JPL, enthusiastically indicates JPL's interest in modifying and repeating this program for other educators. John Young indicated an interest on the part of career guidance personnel to do much the same with other major employers in this area.

If we are to have successful career guidance programs, we must equip our counselors with the tools to complete the job.

EPDA PROJECT - "CAREER GUIDANCE TRAINING"

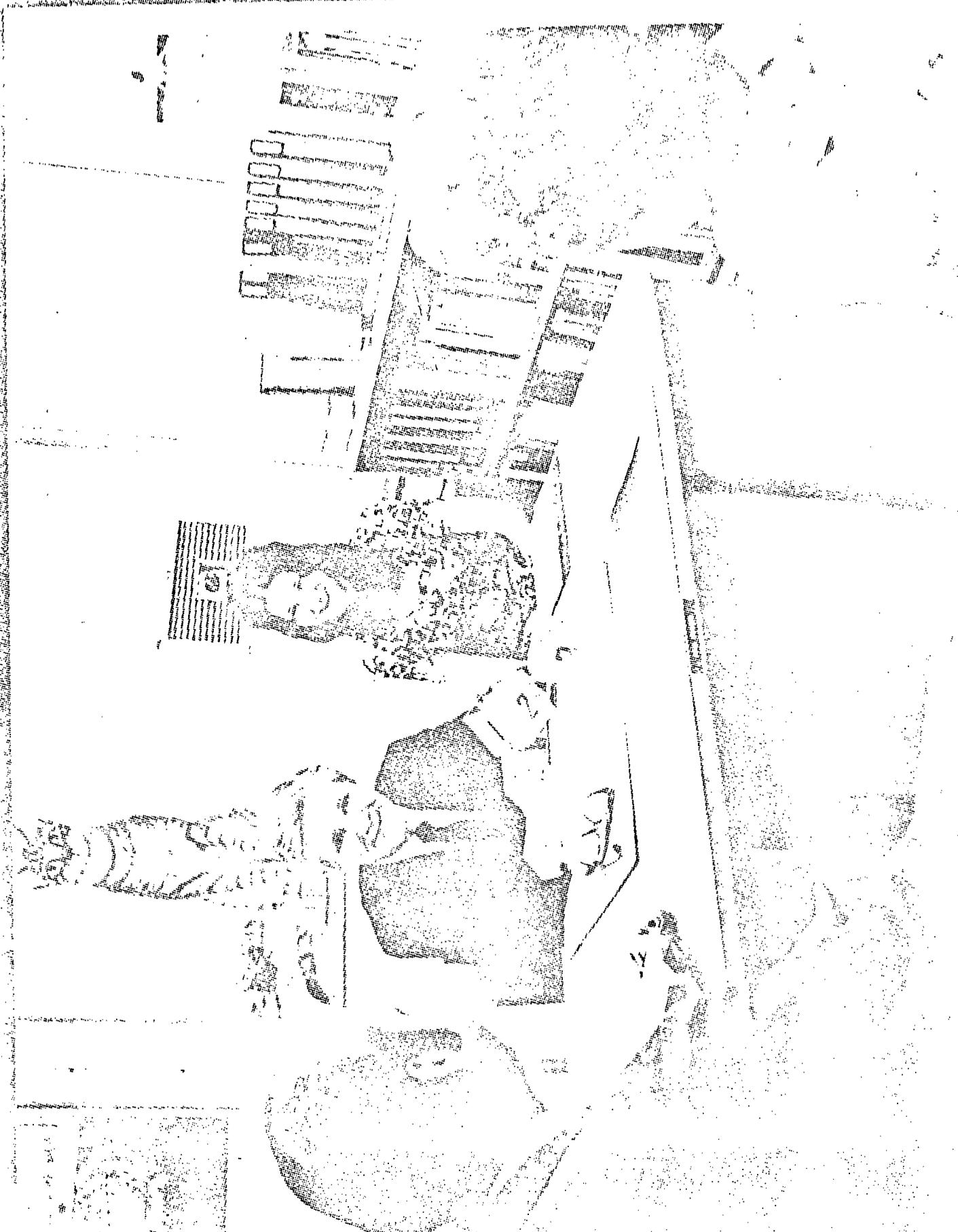
Employment Program for High School Counselors of Occupational Education

6 July	8:00 - 8:30 a.m.	Informal socializing
	8:30 - 10:00 a.m.	Greeting and introductions
		The Laboratory - Historically, the missions and research
	10:15 - 12:00 p.m.	Orientation - as employees
		Educational Programs of JPL
	12:15 - 1:15 p.m.	Lunch - Laboratory Cafeteria
	1:30 - 3:00 p.m.	"The Program" (Counselor Employment Program - Purpose and intent)
	3:00 p.m.	Open session (rap)
7 July	8:00 - 12:00 p.m.	Laboratories and Facilities Tour
	12:00 - 1:00 p.m.	Lunch - Laboratory Cafeteria
	1:00 - 2:00 p.m.	Open session (rap)
	2:00 - 4:30 p.m.	Work station assignments for the first week
8 July	8:00 - 4:30 p.m.	Assigned work station
9 July	8:00 - 10:00 a.m.	Assigned work station
	10:00 - 12:00 p.m.	Evaluation and Critique of past week's experience
	12:00 - 1:00 p.m.	Lunch - Laboratory Cafeteria
	1:00 - 2:30 p.m.	Evaluation and Critique continued
		Following week's assignments to work stations
	2:30 - 4:30 p.m.	Coming week's work station

12 July	8:00 - 4:30 p.m.	Assigned work station
13 July	8:00 - 4:30 p.m.	Assigned work station
14 July	8:00 - 4:30 p.m.	Assigned work station
15 July	8:00 - 4:30 p.m.	Assigned work station
16 July	8:00 - 10:00 a.m.	Assigned work station
	10:00 - 12:00 p.m.	Evaluation and Critique of past week's experience
	12:00 - 1:00 p.m.	Lunch - Laboratory Cafeteria
	1:15 - 2:30 p.m.	Evaluation and Critique continued
		Next week's assignments to work stations
	2:30 - 4:30 p.m.	Coming week's work station

Each of the following four weeks will be the same basic schedule, subject to some revision.

Funding Agent - La Canada Unified School District





SECTION III

"PARTICIPANTS"

EDUCATION PROFESSIONS DEVELOPMENT ACT

La Canada Unified School District - Jet Propulsion Laboratory
 CAREER GUIDANCE TRAINING
 Project No. 19-64659-EF037-72

Project Director

John E. Young, Director
 Occupational Education Programs
 for High Schools
 Pasadena City College
 1570 East Colorado Boulevard
 Pasadena, California 91106
 (213) 795-6961, Ext. 315

JPL Project Coordinator

Gordon L. Wenger, Manager
 Public Educational Services
 Jet Propulsion Laboratory
 4800 Oak Grove Drive
 Pasadena, California 91103
 (213) 354-4321

LIST OF PARTICIPANTS

Arcadia High School

Mr. Max Cramer, Head Counselor
 633 East Camino Real
 Arcadia, California 91006
 (213) 447-3449

Mrs. Jean McIlyar, Occupational
 Counselor
 3033 La Travesia Drive
 Fullerton, California 92632
 (714) 526-6440

La Canada High School

Mr. Floyd Honsberger, Voc. Counselor
 4333 Hayman
 La Canada, California 91011
 (213) 790-4574

Mr. Ronald Reich, Counselor
 4726 Indianola Avenue
 La Canada, California 91011
 (213) 790-1740

Muir High School

Mr. George Smith, Jr., Counselor
 1343 Salisbury Road
 La Canada, California 91011

Pasadena High School

Mr. Richard C. Busik, Counselor
 1887 Oxford Avenue
 Claremont, California 91711

San Marino High School

Mrs. Elizabeth B. Walker, Counselor
 3840 Madison Road
 Pasadena, California 91103
 (213) 790-0689

EPDA - CAREER GUIDANCE TRAINING
List of Participants

South Pasadena High School

Miss Janet Knupp, Counselor
12130 Old River School Road
Downey, California 90242
861-5032

Temple City High School

Mr. Robert H. Tippy, Career Guidance Counselor
1837 7th Place
Arcadia, California 91006
(213) 447-7741

Pasadena City College

*Mr. Edwin Simpson, Counselor (Jul 26-30)	513 Knight Way La Canada, California 91011 (213) 790-4350	Mr. Delmar Heyne, Counselor (Jul 12-16)	130 East Norman Arcadia, California 91006 (213) 447-2409
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Mr. J. L. Mathias, Counselor (Jul 19-23)	424 W. Fairveiw Avenue San Gabriel, California 91776 (213) 281-5755	*Mr. John R. McFarlane, Counselor (July 6-9)	150 Jaxine Drive Altadena, California 91001 (213) 797-4251
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Mr. John D. Reynolds, Counselor (Aug 2-6)	2397 Vista Laguna Terrace Pasadena, California 91103	Mr. Donald G. DePledge, Counselor (Aug 9-13)	136 So. Meadow Road West Covina, California 91790 (213) 339-3477
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California State College at Los Angeles

Mrs. Marilyn M. Buckroff, Graduate Student
3645 East Ocean Boulevard
Long Beach, California 90803

*Due to a last minute change, the dates are out of order for these two participants.

SECTION IV

"CLAIM FOR FUNDS"

(EPDA P.L. 90-35, Part F)

EXPENDITURES SUMMARY
P.L. 90-35, Part F 1972
Fiscal Year Ending June 30, 1971

REGION Southern	CODE Z	COUNTY Los Angeles	CODE 19
DISTRICT La Canada Unified School District			CODE 60659

A.	DIRECT COST--ADMINISTRATIVE AND INSTRUCTIONAL STAFF SALARIES	TOTAL EXPENDITURES	LOCAL FUNDS	FEDERAL FUNDS CLAIMED
1	Director	3,500	3,500	--
2	Secretarial and Clerical	640	640	--
3	Other Administrative Supporting Staff (1) *	1,872	1,872	--
4	Full-time Instructors	No. 10	15,960	--
5	Part-time Instructors	No. 110 *	10,524	15,960
6	Laboratory Assistants	No. 10 *	2,500	--
7	Instructional Assistants	No. 10 *	2,500	--
8	Lecturers and/or Consultants	No.	--	--
9	SUBTOTAL FOR SALARIES (Sum of Lines 1 thru 8)	37,496	21,536	15,960
B.	OTHER DIRECT COSTS	--	--	--
10	Employee Services and Benefits	--	--	--
11	Travel	240	240	--
12	Office Supplies, Duplicating, Publicity, Communications * JPL 500	807	500	307
13	Instructional Supplies, etc.	493	--	493
14	Required Fees	--	--	--
15	Equipment Rental and/or Depreciation (if applicable)	--	--	--
16	SUBTOTAL FOR OTHER DIRECT COSTS (Sum of Lines 10 thru 15)	1,540	740	800
17	SUBTOTAL DIRECT COSTS (Sum of Lines 9 and 16)	39,036	22,276	16,760
18	Reimbursement for substitute teacher (to district, if applicable)	--	--	--
19	TOTAL DIRECT COSTS (Sum of Lines 17 and 18)	39,036	22,276	16,760
20	Evaluation (3% of Direct Cost)	800	--	800
21	GRAND TOTAL (Sum of Lines 19 and 20)	39,836	22,276	17,560

*Jet Propulsion Laboratory Participation

STATE OF CALIFORNIA
Vocational Education

2.

CLAIM FOR FUNDS FROM THE EDUCATION PROFESSIONS DEVELOPMENT ACT
P.L. 90-35, Part F

REGION	Southern	CODE	Z	COUNTY	Los Angeles	CODE	19
DISTRICT	La Canada Unified School District					CODE	6059
ADDRESS	5039 Palm Drive, La Canada, California 91011						

Claim for funds based upon expenditures from July 1 1971 through August 30 1971

PRIORITY	TOTAL FUNDS	LOCAL FUNDS	FEDERAL FUNDS CLAIMED
1. Increasing Effectiveness of Teaching for Disadvantaged and Handicapped			
2. Updating of Occupational Competencies			
3. Updating Administrative and Supervisory Skills	9,959	5,569	4,390
4. Providing Industry School Exchange			
5. Preparing New Vocational Administrative Personnel	9,959	5,569	4,390
6. Orientating Nonvocational Education Personnel to Vocational Education	9,959	5,569	4,390
7. Improving Instructional Effectiveness	9,959	5,569	4,390
8. TOTAL EXPENDITURES	39,836	22,276	17,560

CERTIFICATION: This certifies that the expenditures detailed above have been made and the program has been conducted in strict accordance with Public Law 90-35, the Federal Regulations pertaining thereto, Title VI of the Civil Rights Act of 1964, the California Plan for Vocational Education, the specifications and stipulations of the project, and the budget as approved. Complete records of expenditures and an inventory of equipment have been maintained and are available for audit. All expenditures were made during the period indicated in accordance with the laws and regulations governing this district.

This is a: Final Claim X, Partial Claim _____ (Check one)

Prior claims have been filed totaling:

\$ _____ Date _____

\$ _____ Date _____

\$ _____ Date _____

John E. Gann
Superintendent or Designate

November 10, 1971

Date

FOR STATE USE ONLY

Payment approved \$ _____

State Director of Vocational Education

Date



8

SCHEMATIC
SUBS



SECTION V

"SLIDE-TAPE PRESENTATION OF PROJECT"

"Purpose"

As a part of the summer career guidance project, a slide-tape presentation on occupational opportunities was prepared for each participant. This presentation on CAREER GUIDANCE and the world of work is an additional aid to the counselor in improving his career guidance delivery techniques.

INDEX

Accountant, Junior	C14
Air Conditioning Mechanic	B26
Architect's Aide, Student	B23
Audio-Visual Training Specialist	C15
Auto Mechanic	A19
Biologist	D2
Body and Fender Man	A20
Buyer	C5
Buyer, Junior	C7
Cabinetmaker	B31
Cameraman	D12, p13
Carpenter	B36
Chauffeur	B36
Chauffeur	No slide
Chemist	D3
Clerk, File	A9
Clerk, General	A6
Clerk, Receiving	C12
Commercial Artist	B1
Computer Operator	B13, B14
Computer Programmer	A25
Copy Cameraman	A32
Design Draftsman	C11
Draftsman	C10
Draftsman, Detail	C9
Duplicating Machine Operator	A6.5

INDEX -- (Continued)

Editing Clerk	A7
Electrician	B25
Electronic Scanning Microscope Operator	B22
Electronic Technician	B8
Encapsulator	D10, D11
Engineer	B7
Engineering Aides, student	B19, B20
Expediter	B11, B12
Film Developer, roll	A36
Film Developer, sheet	A34
Firefighter	A22, A23
Forklift Operator	A21
Geologist	D4
Geophysicist	D5
Groundskeeper	B34
Guard, Security	A2
Guide, Educational Tour, part-time	D1
Image Processor	No slide
Inventory Control Clerk	C6
Keypunch Operator	B5
Landscape Architect	B24
Library Assistant	A28
Library Clerk	A30
Library Technician	A27
Life Scientist	No slide
Literature Searcher	A31
Lumber Yardman	B32

INDEX - (Continued)

Machinist	B28
Mail Clerk	C3
Mathematician	A26
Metallographer	B21
Meteorologist	No slide
Microbiologist	A14
Microbiology Technologist	A13
Microphotography Technician	B9
Millwright	B29
Numerical Control Machine Operator	D9
Nurse	A11
Offset Pressman	A3
Ozalid Operator	C8
Painter	B33
Personnel Interviewer	A5
Physicist	No slide
Photographer	A35
Physician	A10
Plumber	B30
Quality Control Technician	B16, B18
Receptionist	A1
Secretary, General	A8
Sheet Metal Mechanic	D8
Stenographer	A4
Storekeeper	C13
Supervisor of Secretarial Training	C16

INDEX - (Continued)

Technical Control Supervisor	B15
Technical Illustrator	B2
Technical Reproduction Typist	B4
Technical Writer	B3
Technician	B6, A15
Tool & Die Maker	No slide
Welder	D6, D7
Wind Tunnel Maintenance Man	A17, A18
Wind Tunnel Technician	A16

COUNSELOR SLIDE PRESENTATION

INTRODUCTION

- 1-1 - (Blast Off)
The impact of the space age is making widespread changes in the world of work.
- 1-2 - (Mariner Fly By)
New technology continually alters the requirements for employment.
- 1-3 - (Computer Decks)
Old jobs change and even vanish while new jobs are appearing on the horizon.
- 1-4 - (Goldstone Mars)
Lets look at a facility that is pioneering these space age changes. And then go to nearby Jet Propulsion Laboratory.
- 1-5 - (Aerial View of JPL)
A complex facility - Comprised of buildings, services and people.
- 1-6 - (Slide of People) In distance
- *1-7 - (Slide of People) Close up
These people represent varied occupations. *In the following slides you will see people engaging in familiar and unfamiliar occupations.

COUNSELOR SLIDE PRESENTATION - TEXT

1. Receptionist: High school diploma recommended. Duties include receiving clients, determining their needs, and directing them accordingly, making appointments, handling mail and messages, and sometimes performing clerical duties.

This receptionist is receiving guests at the Visitors Center.

2. Security Guard: High school diploma recommended. Duties include standing guard or walking about the premises to enforce plant rules, directing traffic, and examining credentials at entrances.

This guard is checking a driver's credentials at the main gate.

3. Offset Pressman: High school diploma desirable. Duties include setting up, operating, and maintaining a press to produce copies from masters. Generally, he or she works in an office or printing establishment.

This offset pressman is operating a 10 x 14 offset press.

SLIDE TEXT (Cont.)

4. Stenographer: High school diploma recommended. Duties include taking dictation in shorthand, typing from voice recordings, and performing clerical duties.

This stenographer is typing on an electric typewriter.

5. Personnel Interviewer: High school diploma required, some college recommended. Duties include interviewing applicants initially to determine their suitability for employment, and then gathering pertinent information about the applicant to be used by prospective employers.

This interviewer is talking with an applicant.

6. General Clerk: High school diploma recommended. Clerical duties include copying information, sorting and filing records, handling mail, answering telephones, and sometimes operating duplicating machines or typing.

This general clerk is sorting mail.

- 6.5 Duplicating Machine Operator: High school diploma required. Duties include reproducing hand or typewritten matter and must be responsible for accounting of materials and minor repairs of equipment.

This young lady is duplicating a document.

7. Editing Clerk: High school diploma recommended. Duties include preparing, revising, and correcting material for publication, and also modifying copy to conform with company requirements.

He is shown editing an article for the weekly plant news-sheet.

8. General Secretary: High school diploma recommended. Duties include relieving administrative personnel of clerical work, making decisions about the handling of minor business details, and sometimes typing, taking dictation, or answering the telephone.

This general secretary is receiving a call at her desk.

9. File Clerk: High school diploma recommended. Duties include reading, classifying, indexing, filing, and locating printed materials and documents.

This girl is filing in a special motorized rotating filing cabinet.

10. Physician: M.D. degree required. Responsibilities include diagnosing and treating diseases and disorders of the human body, developing and testing new treatment techniques, and investigating new drugs and medications.

This doctor is examining an eye injury.

11. Nurse: Further training is required beyond high school. Responsibilities include giving general nursing care involving medication and treatment prescribed by a physician, and also observing, recording, and reporting the patient's condition.

This nurse is changing a bandage.

12.

13. Microbiology technologist: A.A. degree required. Duties include cultivating, isolating, and testing micro-organisms using laboratory equipment under the direction of a biologist.

This microbiology technologist is weighing chemicals on a balance scale.

14. Microbiologist: Doctorate recommended. This profession involves isolating and making culture studies of bacteria and other micro-organisms, by microscopic examination, as they exist on living tissues.

This microbiologist is supervising the technologist as she works on cultures.

15. Technician: High school diploma required, further training recommended. The primary duty is to work in direct support of engineers in testing fundamental engineering, mathematical, draft design, or other scientific principles.

This technician is setting up a shock tube prior to a test fire.

16. Wind Tunnel Technician: High school diploma required, further training recommended. Duties include collecting data concerning aerodynamic characteristics of objects, and also submitting charts, graphs, and technical reports to engineers.

This technician is setting limits for a wind tunnel test.

17. Wind Tunnel Maintenance Man: High school diploma recommended. Duties include installing, repairing, and performing reliability tests on wind tunnel electro-mechanical equipment.

This maintenance man is checking the data board.

18. Wind Tunnel Maintenance Man - Slide 2: This maintenance man is taking readings on a 4000 horse-power generator in the wind tunnel system.

19. Auto Mechanic: High school diploma recommended. Major duties include repairing and overhauling automobiles, trucks, and other equipment using hand and electrical tools, and electronic testing equipment.

This auto mechanic is uncrating a new engine.

20. Body and Fender Man: High school diploma recommended. Duties include removing and installing vehicle body parts, and repairing by hammering, filing, sanding, and then refinishing repaired surfaces. He may also estimate cost of repairs.

This body man and helper are wet sanding a damaged truck body.

21. Forklift Operator: High school diploma recommended. Major duty is driving forklift to elevate and transport bulk material from warehouses, storage yards, or factories to designated areas.

This forklift operator has elevated material to truck bed.

22. Firefighter: High school diploma recommended. Responsibilities include protecting life and property by controlling and extinguishing fires through the use of water or chemicals. He also maintains specialized fire-fighting equipment.

This firefighter is supervising his helper.

23. Firefighter - Slide 2: This firefighter is showing how to extinguish a gasoline or electrical fire with a CO² extinguisher.

24.

25. Computer Programmer: A. A. degree required, further training recommended.

Main duty is to write a program by which the computer functions in order to obtain information.

This computer programmer is observing output at the terminal under supervision of a mathematician.

26. Mathematician: Bachelor's degree required. Responsibilities include directing solutions to problems in various fields by mathematical methods, and also using computers, calculators, analyzers, and comparators.

This mathematician is working out formulas in his office.

27. Library Technician: High school diploma recommended. Duties include operating audio visual and data processing equipment, and copying and printing out information on microfilm and microfiche cards.

These library technicians are shown reading and reproducing microfich on a microfiche reader.

28. Library Assistant: High school diploma recommended. Duties include operating audio-visual and data processing equipment, and copying and printing-out information on microfilm and microfiche cards.

These library technicians are shown reading and reproducing microfiche on a microfiche reader.

29.

30. Library Clerk: High school diploma recommended. Duties include receiving library mail, checking orders, and preparing material for mailing.

These library clerks are working at the mail counter.

31. Literature Searcher: High school diploma recommended. Duties include assisting patrons with research problems by searching literature and compiling bibliographies, arranging special collections of technical literature, and using the library equipment.

The chief literature searcher is shown operating the NASA Recon Console.

32. Copy Cameraman: High school diploma recommended. Further training required. Duties include making enlarged or reduced copies of materials on film, and also making negatives or prints.

This cameraman (woman) is getting copy ready on a 48" x 60" copy board.

33.

34. Sheet Film Developer: High school diploma recommended. Further training required. Duties include operating and regulating the film developer, mixing his or her own chemicals, and adhering closely to temperature and time controls.

35. Photographer: High school diploma recommended. Duties include photographing subjects and arranging equipment. A photographer must have a feeling for artistic composition.

This photographer is adjusting the lens on a studio portrait camera.

36. Roll Film Developer: High school diploma recommended. Duties include operating and regulating automatic film developer to develop positive or negative films.

This film developer is feeding film into the developing machine in the dark room.

- 1B Commerical Artist: High school diploma required, further training recommended. Major duty is to make color illustrations using materials best suited to give the desired visual effect.

This commerical artist is using an air brush to fade in a color on a shaded illustration of Mars.

- 2B Technical Illustrator: High school diploma required, further training recommended. Major duty is making charts, graphs, and pictorial illustrations of products according to engineering drawings and specifications.

This technical illustrator is working on a pictorial drawing of the Viking 75 unmanned spacecraft.

- 3B Technical Writer: High school diploma plus further training required. Main responsibilities include organizing, writing, and editing material about science and technology in a useful form for technicians, scientists, and/or the general public.

This technical writer is seeking a reference book.

- 4B Technical Reproduction Typist: High school diploma and further training required. Primarily responsible for taking typed material and composing it to a determined length of line for photo reproduction.

This technical typist is watching the composer as it types from a magnetic tape.

- 5B Keypunch Operator: High school diploma recommended. Main duty is operating a machine designed to sort and count large quantities of accounting and statistical information by a punch-card process.

This operator is running the key punch machine in a repetitive mode.

- 6B Electromechanical Technician: High school diploma and further training required. Duties include fabricating testing equipment for instruments in preparation for analysis of data, and performing necessary adjustments.

This technician is making the wiring changes agreed upon by himself and the engineer.

- 7B. Engineer: Bachelor's degree required. Responsible for conducting research and development concerned with design and manufacture of equipment and its application.

This engineer and a technician are discussing a wiring change in the PDP-7 computer to change its capability.

- 8B Electronic Technician: A.A. degree required. Duties include setting up and performing experiments related to projects designed by engineers and collecting data for review.

This electronic technician is adjusting the temperature in an oven/freezer to perform temperature tests on an electronic part.

- 9B Microphotography Technician: High school diploma recommended. Responsible for feeding data sheets into the camera to be greatly reduced on microfilm for storage and later retrieval.

This technician is feeding data sheets into the camera at the rate of 165 feet per minute.

- 11B Expediter: High school diploma recommended. Responsible for handling key punched cards and for keeping record of data processed information on a schedule designed to meet demands of clients who require computer runs.

This expediter is receiving a deck of data cards from an engineer.

- 12B This expediter is feeding data cards into a tape input machine.

- 13B Computer Operator: High school diploma recommended. Duties include reading computer's message, screening and interpreting requested data, selecting appropriate tapes, and placing tapes on or removing them from the tape player.

This operator is closing the door of the machine after installing a tape in the 1108 computer.

14B This operator is monitoring the computer message screen.

15B Technical Control Supervisor: A.A. degree required. Responsible for supervising technicians in the operation and maintenance of constant power supplies through direct and alternating current.

This supervisor is checking high speed data for the electrical power needed by the battery of computers.

16B Quality Control Technician: High school diploma and further training required. Duties include the monitoring of performance of fabricated instruments for reliability, recording and plotting of data.

This technician is operating the spacecraft solar panel.

17B

- 18B This technician is testing solar panels using ultraviolet light to simulate the sun in space.

- 19B Student Engineering Aides: High school diploma required. Enrolled in related subject area. College students are provided the opportunity to gain on-the-job work experience receiving pay and practical experience.

This student with technician present is testing advanced design voltage regulator.

- 20B Student Engineering Aide: These areas may be directly related to the students college major, and in many cases leads to future permanent employment.

This aide and technician are observing a thermo-electric coupler using a pyrometer.

- 21B Metallographer: High school diploma and further training required. Duties include the investigation of new uses of metals and methods of producing them.

This metallographer is operating a metallograph used to show the crystalline structure of metals.

- 22B Electronics Scanning Microscope Operator: Bachelors degree required. Duties include the identification of materials viewed on a screen, and photographing or reporting of information to an engineer or scientist.

This operator is viewing a specimen on the screen.

- 23B Student Architect's Aide: High school diploma required. Enrolled in related subject area. Duties include completing detailed drawings from rough sketches to be used by tradesmen (such as carpenters, plumbers, etc) in construction.

This student aide is discussing his project with the supervisor.

- 24B Landscape Architect: Bachelors degree in landscape architecture. Duties include compilation and analysis of data on site conditions, and preparations of drawings, locating vegetation, walls, roads and so forth for the best utilization of proposed area.

This architect is working on rough layouts for a customer.

- 25B Electrician: High school diploma recommended. Duties include maintenance and installation of electrical systems, troubleshooting power and lighting circuits, complying with electrical codes, and working with specifications and blueprints.

This electrician is repairing an electric motor.

- 26B Air Conditioning Mechanic: High school diploma required. Further training recommended. This work involves knowledge of refrigeration, electrical theories, and pipe fitting, following blueprints, and specifications.

This mechanic and aide are testing an air conditioning unit.

27B

- 28B Machinist: High school diploma required. Duties include setting up and operating machine tools, using knowledge of mathematics and metal properties to make parts from blueprint specifications.

This machinist is forming a part on a lathe.

- 29B Millwright: High school diploma required. Duties include servicing, repairing, rebuilding and lubricating precision machinery, installation of machinery that needs aligning, leveling and anchoring.

This millwright and aide are completing the repair of a machine.

- 30B Plumber: High school and further education required. Duties include knowledge of blueprint reading, machine tools, and the limits of pipe material for carrying water, steam, air or other liquids or gases.

This plumber is using a pipe threading machine.

- 31B Cabinet Maker High school and further training required. Duties include construction and repair of articles such as cabinets and custom made furniture from blueprints or drawing specifications with the use of specialized equipment.

Here, Cabinetmakers are discussing the print of a project in progress.

- 32B Lumber Yardman: High school education recommended. Duties include supervision and coordination of activities of the lumberyard, and the distribution of stock.

This yardman is filling a lumber order.

- 33B Painter: High school education required. Duties include the preparation of surfaces of buildings, furniture and equipment for application of protective coatings as directed.

This painter is preparing to spray paint an item.

- 34B Groundskeeper: High school education required. Duties include maintenance of grounds by cutting lawns, spraying, pruning, fertilizing, watering, and making minor repairs to fences and walks with simple carpentry, masonry and painting skills.

This groundskeeper is pruning a shrub to improve growth.

35B

- 36B Carpenter: High school education required. Duties include the construction and installation of wood fixture using carpenter's hand and power tools conforming to local building codes and print specifications.

This carpenter is hanging a door being observed by a "sidewalk" superintendent.

- C3 Mail Clerk: High school diploma required. Duties include sorting, distributing and dispatching of mail, and other clerical accounting operations. This mail clerk is operating a postage meter.

**A SUMMER PROGRAM
JULY 5 - AUGUST 18, 1972**

CAREER GUIDANCE TRAINING '72

**FOR ELEMENTARY, SECONDARY,
AND COMMUNITY COLLEGE EDUCATORS
IN THE SOUTHERN REGION OF CALIFORNIA**

**JET PROPULSION LABORATORY
CALIFORNIA INSTITUTE OF TECHNOLOGY
PASADENA, CALIFORNIA**



**A SUMMER PROGRAM
JULY 5 - AUGUST 18, 1972**

CAREER GUIDANCE TRAINING '72

**FOR ELEMENTARY, SECONDARY,
AND COMMUNITY COLLEGE EDUCATORS
IN THE SOUTHERN REGION OF CALIFORNIA**

**Sponsored Jointly by
U. S. Department of Health, Education, and Welfare
Pasadena Area Community College District
Jet Propulsion Laboratory
National Aeronautics and Space Administration
Southern California Edison Company**

The Purpose

The 1972 JPL Career Guidance Training Program will give school teachers, counselors, and administrators an opportunity to learn about, participate in, and analyze a broad range of professional, technical, skilled, and semiskilled occupations. The program is designed to help educators to counsel and guide students in exploring and choosing careers, as part of a career education effort now being developed and endorsed at the national level by the Office of Education.

As a model, this program will provide a documented experience to aid schools, business, industry, and professional organizations throughout the country in setting up similar career guidance training programs to improve career education at the local level.

The Program

Educational personnel will spend 6 weeks working side by side with JPL employees. Participants will move from one work station to another and will survey a wide range of careers.

Co-administrators of the program are Gordon L. Wenger, Manager of the Public Education Services Office of Public Affairs at JPL, and John E. Young, Director, Occupational Education Programs for High Schools, Pasadena City College, Pasadena.

Participants in the program will spend a regular 8-hour day at JPL, basically 8 a.m. to 4:30 p.m., five days a week, Monday through Friday. The first three days (July 5-7) will be spent in orientation; the remaining 6 weeks will be spent "on the job." The stipend for the program is \$75.00 a week for the 6-week period.

Working in groups, participants will produce documents summarizing their studies, suitable for use in counseling and guiding students. In addition, audio-visual materials will be developed for use by all participants to assist in their profession.

The School of Education at the University of California (UCLA) will offer 8 quarter units of graduate credit in Education 214D Vocational Guidance, at a cost of \$160.00 to the participant. There will be no UCLA classwork or examination; grading will be based on attitude, attendance, and contribution to the program, including the documents described above.

The JPL program will cover occupations in the following clusters:

- Business and Office Occupations
- Communications and Media Occupations
- Construction Occupations
- Transportation Occupations
- Manufacturing Occupations
- Environmental Control Occupations
- Health Occupations
- Public Service Occupations
- Fine Arts and Humanities Occupations

Specific occupations to be studied in the program may include the following:

Automotive Mechanic	Mathematician
Biologist	Nurse
Cameraman	Personnel Interviewer
Carpenter	Physician
Chemist	Plumber
Computer Programmer	Proofreader
Draftsman	Receptionist
Electrician	Secretary
Engineering Aide	Technical Illustrator
Geologist	Technical Writer
Landscape Architect	Tool and Die Maker
Library Clerk	Welder

The program is funded through the Education Professions Development Act (EPDA) Project No. 19-64659-EF037-72. Title VI of the Civil Rights Act of 1964 states: "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance." As an EPDA program, the JPL program will, of course, be operated in compliance with this law and will also be available to participants regardless of their sex.



The Participants

The program is designed for elementary, secondary, and community college educators employed in the 11 counties of Imperial, Inyo, Kern, Los Angeles, Orange, Riverside, San Bernardino, San Diego, San Luis Obispo, Santa Barbara, and Ventura. Applications from qualified California educators outside this region will also be considered.

The Place

The Jet Propulsion Laboratory, operated by the California Institute of Technology, supports the National Aeronautics and Space Administration by performing scientific experiments and investigations, by carrying out interplanetary and other flight missions using unmanned spacecraft, by developing and operating the Earth-based tracking and operational facilities necessary to support deep space missions, and by conducting supporting research to provide the required space technology. JPL has been responsible for many spacecraft missions, including the Ranger and Surveyor flights to the moon and the Mariner flights to Venus and to Mars.

Like a small city, JPL occupies 180 buildings on 175 acres in the foothills of the San Gabriel Mountains northwest of Pasadena. Approximately 4,000 people are employed at JPL, in the varied occupations necessary to support the scientific missions—in all, a total of 412 different occupations.

The Pilot Project

In the summer of 1971, a pilot Career Guidance Training project was carried out at JPL under the same sponsorship as the 1972 program. The 16 participants in the pilot project, all of them counselors, came from high schools in Arcadia, La Canada, Pasadena, San Marino, South Pasadena, and Temple City, from Pasadena City College, Pasadena, and from the California State College at Los Angeles. The group surveyed occupations in the areas of public affairs, personnel, employment training, materiel logistics, plant engineering, photography and graphic arts, printing and documentation, environmental sciences, and tracking support.

For further information on the Career Guidance Training '72 Program, please fill in the application form below and return it, postmarked by May 17, 1972, to

John E. Young, Director
Occupational Education Programs for High Schools
Pasadena City College
1570 East Colorado Boulevard
Pasadena, California 91106

Name _____

Home Address _____
(street)

(city) (state) (ZIP code)

School Address _____
(street)

(city) (state) (ZIP code)

Your title (if a teacher, what subjects) _____

Name and title of your immediate supervisor _____

Jet Propulsion Laboratory
California Institute of Technology
National Aeronautics and Space Administration
4800 Oak Grove Drive, Pasadena, California 91103



57

C4

- C5 Buyer: Additional training beyond high school required. Duties include purchasing services, equipment, or supplies for an organization, by techniques of interview, cost analysis and negotiation.

The buyer is placing an approved order with a vendor.

- C6 Inventory Control Clerk: High school diploma required. Duties include filing acquisitions by buyers, typing file information, and accounting for files.

This clerk is updating her files.

- C7 Junior Buyer: High school diploma required. Duties include buying goods for the company's use, basing selection on the demand for specific merchandise and the verification of stock received from manufacturers.

This slide shows the varied activities of purchasing clerk area.

- C8 Ozalid Operator: High school diploma required. Duties include operation and maintenance of the printer-developer, and inventorying supplies and completed tasks.

This young man is preparing to make a print on the Ozalid machine.

- 9C Detail Draftsman: High school diploma required. Further training recommended. Duties include preparation of clear, complete, and accurate working drawings according to dimensions and specifications.

This is a general view of the drafting room.

- 10C Draftsman: High school diploma required. A.A. degree recommended. Duties include making clear, complete working plans from rough sketches for engineering purposes.

This draftsman is making adjustments to his original drawing.

- 11C Design Draftsman: A.A. degree required. Duties include designing drawings to assist in developing experimental ideas evolved by research engineers.

This slide shows an engineer and designer discussing the designer's drawing.

- 12C Receiving Clerk: High school diploma required. Duties include receiving, unpacking, examining, and verifying completeness of shipments against records.

This clerk is unpacking a delicate instrument.

- 130 Storekeeper: High school diploma required. Duties include receiving, storing and issuing supplies and equipment and compiling records of transactions.

This storekeeper is issuing material to customer.

- 140 Junior Accountant: High school diploma required. Duties include maintaining accounts and records in bookkeeping activities which control inventories and purchases.

Young accountants are verifying orders in this slide.

- 150 Audio Visual Training Specialist: High school diploma required. Duties include preparing audio-visual teaching aids and methods for in-service educational programs.

This summer program student is receiving latest instruction for preparation for advancement.

160 Supervisor of Secretarial Training: High school diploma required. Duties include preparation of lesson plans for furthering skills and knowledge of trainee.

Supervisor is administering a typing test to employee.

- D1 Part Time Educational Tour Guide: High school diploma required. Duties include planning and scheduling tours, making arrangements for speakers, films, printed handout materials, security clearance, lunch and transportation.

This Summer employee is giving a lecture to visiting high school students.

- D2 Biologist: Bachelors degree required. Responsible for the study of origins, relationship, anatomy and functions of plant and animal life.

This biologist is shown studying a culture of photosynthetic bacteria.

- D3 Chemist: Bachelors degree required. Responsibilities may include research, development, management, consulting and technical reporting while searching for new knowledge and practical uses for the properties and composition of substances.

This chemist is shown observing micro-organisms.

- D4 Geologist: Masters degree recommended. Studies in the field and in the laboratory the structure composition and history of the crust of the celestial bodies and is responsible for technical reports, maps and use of complex instruments.

This geologist is examining lunar dust through a microscope.

- D5 Geophysicist: Bachelors degree required. Responsible for the study of the earth's physical characteristics by applying the principles of other sciences. Highly complex precision instruments and computers to measure and record data are used.

Here you see a geophysicist working on a math problem on the chalkboard.

- D6 Welder: High school diploma recommended. Duties include joining pieces of metal to produce a permanent bond using three basic processes: (arc, gas or resistance welding) and performing manual and machine operations.

The arc welder is joining some aluminum parts.

- D8 Sheet Metal Mechanic: High school diploma recommended. Duties include building and installing heating and air conditioning ducts, roofing and light metal frameworks and the use of hand and power tools to join metals in a variety of ways.

The mechanic in this slide is working on an intricate sub-system.

- D9 Numerical Control Machine Operator: Training beyond high school recommended. Sets up and operates magnetic or punched tape controlled machinery which automatically machines metal or plastic parts (drills, broaches, mills or reams).

This operator is checking a vertical milling machine under control of the computer.

- D10 Encapsulator: High school diploma recommended. Encases magnetic electronic components in plastic to protect them from vibration and moisture.

The technician is insulating electrical conductors with a bonding material.

D11 In this slide a TV Vid-A-Con tube encapsulated in polyester resin is being examined under the microscope.

D12 Cameraman: High school diploma recommended. Duties include
& the operation of camera equipment to photograph scenes for
D13 recording and transmission, and the ability to establish
photographic composition of scene by moving camera while
maintaining focus.

The cameraman is monitoring the console in the auditorium control room.

This slide shows him making a repair on the TV camera.

14
&
15 Wenger and Serrano conferring.

CONCLUSION

Concl - 1 (Mariner Space Craft)

Thanks to J.P.L. you have seen many occupations that could be yours if you possess the necessary human qualities of responsibility, promptness and a positive attitude.
Best wishes, timorrow is yours.

Concl - 2 (Sunset at Goldstone)

SECTION VI

"EVALUATION REPORT"

EVALUATION REPORT

EDUCATIONAL PROFESSIONS DEVELOPMENT ACT

La Canada Unified School District - Jet Propulsion Laboratory

CAREER GUIDANCE TRAINING

Project No. 19-64659-EF037-72

Submitted By:

John E. Tulley, Ed. D.
Project Evaluator
September, 1971

BACKGROUND

The project involved the cooperative efforts of local school districts, Pasadena City College, and Jet Propulsion Laboratory in Pasadena. High School and community college counselors (11) were placed at the JPL facility for employment during a six week period in the summer. The counselors were rotated through the various departments at JPL to study, observe, and participate in the same type of work that employees in each department were doing. The project also called for specialized orientation to the laboratory.

Not all counselors were exposed to the same departments or jobs. Basic job areas covered included many of the following: clerk-typist, shipping clerk, receptionist, carpentry-maintenance, machinist, computer program operator, welder, electrician, plastics technician, tracking and data acquisition technician, internal security controller, dynamic and environmental control specialists, and several others.

Participants

Counselors selected for the project were chosen on the basis of expressed interest, suitability for participation, and specific counseling responsibilities. The group included experienced counselors from the following high schools: Arcadia, La Canada, John Muir, Pasadena, San Marino, South Pasadena, and Temple City. The group also included a graduate student from the counseling education program at California State College at Los Angeles. There were four women and six men in the basic project group.

A secondary group consisted of six counselors from Pasadena City College. Each PCC counselor was released from his regular assignment for one week. This time was spent at the JPL facility but because of the time restriction the exposure to various jobs and work areas was greatly reduced.

EVALUATION OUTLINE

The evaluation of the project included the following basic elements:

- I. Evaluation of Basic Knowledge Obtained Regarding the JPL Facility.
- II. Evaluation of Attitudes Toward Key Ingredients Within the Program.
- III. Summary Assessment as Determined by a Questionnaire as Well as the Personal Assessment of the Project Evaluator.
- IV. Project Carry Over as Determined by Follow-up Activities.

I. Evaluation of Basic Knowledge Obtained Regarding the JPL facility.

A basic objective of the project was to determine if exposure to JPL and the various jobs and work areas produced a significant change in terms of the counselors' knowledge of these. The Project Evaluator designed a short objective test to cover the following topics:

(1) general knowledge of JPL, (2) specific knowledge regarding educational/training requirements of typical JPL jobs, and (3) specific knowledge regarding duties and functions of various JPL jobs. A copy of the test entitled EPDA Evaluation Test, Part I is in Appendix A.

II. Evaluation of Attitudes Toward Key Ingredients Within the Program.

It was hoped that exposure to various occupations at JPL that were in the service, trade, or technical field would produce more favorable attitudes toward these types of positions on the part of the counselors. Utilizing the semantic differential method as developed by Osgood, et al. (3) the Project Evaluator selected ten pairs of polar adjectives that research has shown to rate high in the evaluative factor. Six basic concepts were selected to be rated. Appendix B contains a copy of this instrument.

III. Summary Assessment as Determined by a Questionnaire as Well as the Personal Assessment of the Project Evaluator.

A brief questionnaire (Appendix C) was developed by the JPL personnel most closely associated with the project. It was designed to elicit overall reactions of the counselors as well as comments and suggestions for project improvement.

Each Friday during the six week session all participants were brought together for additional orientation and discussion. A major aspect of these sessions was to provide an opportunity for an open and free exchange of comment regarding the project. The Project Evaluator attended several of these meetings and conducted interviews with participants on an individual basis. In addition three Friday sessions were video taped and edited into a 28 minute presentation which was reviewed.

IV. Project Carry Over as Determined by Follow-up Activities.

A basic expectation of the project was that the exposure to the JPL facilities would have a positive carry over in terms of on-the-job performance for the counselors during the coming year. In order to assess this, a questionnaire will be sent to all participants during the current semester in order to measure the extent of carry over.

EVALUATION DESIGN AND FINDINGS

The evaluation design and findings are described in each of the four areas in the evaluation outline.

I. Evaluation of Basic Knowledge Obtained Regarding the JPL Facility

The Project Evaluator administered the EPDA Evaluation Test, Part I to all participating counselors the first morning of the six week period. At that time, each counselor submitted the name of a fellow counselor who would serve as his "control" for the evaluation testing. Each participant was allowed to select his own control counselor and testing materials were sent or hand carried to these persons. In most cases, counselors arranged to have a fellow counselor at their school serve as a control. The graduate student at California State College at Los Angeles selected another graduate student.

The Pasadena City College counselors also were matched with fellow counselors and all completed the EPDA Evaluation Test, Part I.

At the conclusion of the project all counselors within the program as well as the counselors serving as controls were retested on Part I of the test.

Table 1 shows the means and ranges for the experimental and control groups on the first testing (T_1) and second testing (T_2).

TABLE 1

	N	Test	Mean	Range
Experimental Group	10	T ₁	25.3	20 - 36
	10	T ₂	26.9	24 - 33
Control Group	10	T ₁	26.3	21 - 31
	10	T ₂	24.3	20 - 30

Table 2 has the means and ranges for the PCC experimental and control groups on the first and second testing.

TABLE 2

	N	Test	Mean	Range
PCC Experimental Group	⑤ 5	T ₁	26.2	21 - 34
	5	T ₂	28.0	24 - 37
PCC Control Group	5	T ₁	24.4	17 - 30
	5	T ₂	23.4	20 - 29

⑤ Note: Six PCC counselors participated in the project but only five were able to complete the tests.

In order to determine if there were significant differences in performance on the EDPA Evaluation Test, Part I, the results were subjected to a statistical analysis. Since it could not be assumed that the matched pairs were drawn from a sample with a normal distribution, a nonparametric technique was utilized. The Wilcoxon matched pairs signed ranks test was considered to be most appropriate. The Wilcoxon test takes into account the relative magnitude and the direction of differences within pairs and is a procedure recommended by Siegel (4) for use with small samples.

TABLE 3

DIFFERENCES IN TEST-RETEST SCORES ON THE EDPA
EVALUATION TEST, PART I

Pairs	Experimental Group	Control Group	d	Rank of d	Ranks with smaller sum (Wilcoxon T)
1.	5	-5	10	9.0	
2.	2	-3	5	5.5	
3.	4	-3	7	7.5	
4.	3	-1	4	4.0	
5.	0	-2	-2	-1.5	1.5
6.	2	-5	7	7.5	
7.	3	3	0	1	
8.	-8	-3	-5	-5.5	5.5
9.	2	0	2	1.5	
10.	3	0	3	3.0	
					T = 7.0

Reference to appropriate tables indicated that at the .05 level the critical value required for an N of 9 was 6 or less. Thus, the Wilcoxon T of 7 was not significant at the .05 level and indicated that there were no significant differences in the performance of the matched pairs on the EDPA Evaluation Test, Part I. It was noted, however, that the critical value was almost reached and it is quite possible that the difference was significant at the .10 level which often is acceptable in pilot projects of this nature. It was also noted that eight of the ten experimental counselors improved their performance on the second administration of the test.

It was originally intended to utilize the Wilcoxon test to analyze the pre and post test results for the PCC experimental and control groups. The decrease in the number of pairs from six to five prohibited the use of the Wilcoxon as six pairs are required for use with the interpretative tables.

The pattern of test-retest gain or loss was similar to that shown by the other groups. Counselors that participated in the program usually improved performance on T_2 while those in the control groups tended not to do as well on T_2 as on T_1 .

Table 4 shows the individual gain or loss for the PCC counselors.

TABLE 4
TEST - RETEST SCORES ON THE EDPA EVALUATION TEST, PART I
(PCC SAMPLE)

Pairs	Experimental Group	Control Group
1.	3	-1
2.	2	-1
3.	3	-3

II. Evaluation of Attitudes Toward Key Ingredients Within the Program

The attitudinal measure entitled EDPA Evaluation Test, Part II, was given to all experimental and control counselors at the beginning and end of the program. While the semantic differential technique can produce quantitative results, caution has to be exercised in the interpretation of these. For the purposes of this study the following recommendation advanced by Nelson (2:76) has been accepted: "As a rule of thumb, any score that is over one scale unit (1:00) in difference becomes significant."

Tables 5 - 28 provide a graphic presentation of the comparisons for each basic concept. As can be seen, the following comparisons were given for each concept:

- (1) Experimental Group T₁ - Control Group T₁
- (2) Experimental Group T₁ - Experimental Group T₂
- (3) Control Group T₁ - Control Group T₂
- (4) Experimental Group T₂ - Control Group T₂

In addition to Tables 5 - 28, the mean scores for each of the groups on each concept are shown in Appendix D.

Each concept is listed below and described as how it was viewed by the experimental and control groups:

Professional Level Occupations

This concept generally was viewed by the experimental and control groups as: Strong, Interesting, Good, Important, Clean, Successful, Positive, and Wise. On T₂ the experimental group rated the concept not as Strong as on T₁. On T₂ the control group rated the concept as less Interesting, less Successful, less Wise, and less True.

TABLE 5

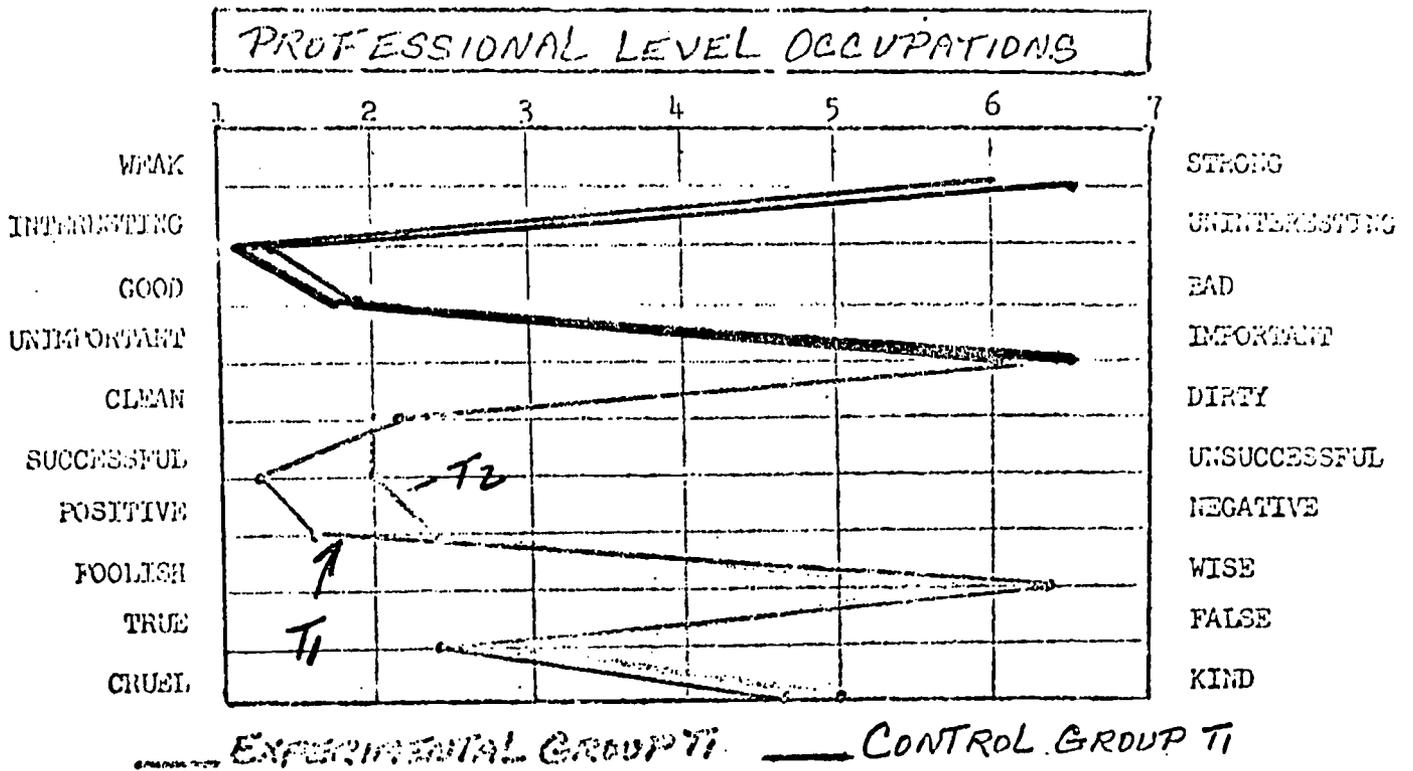


TABLE 6

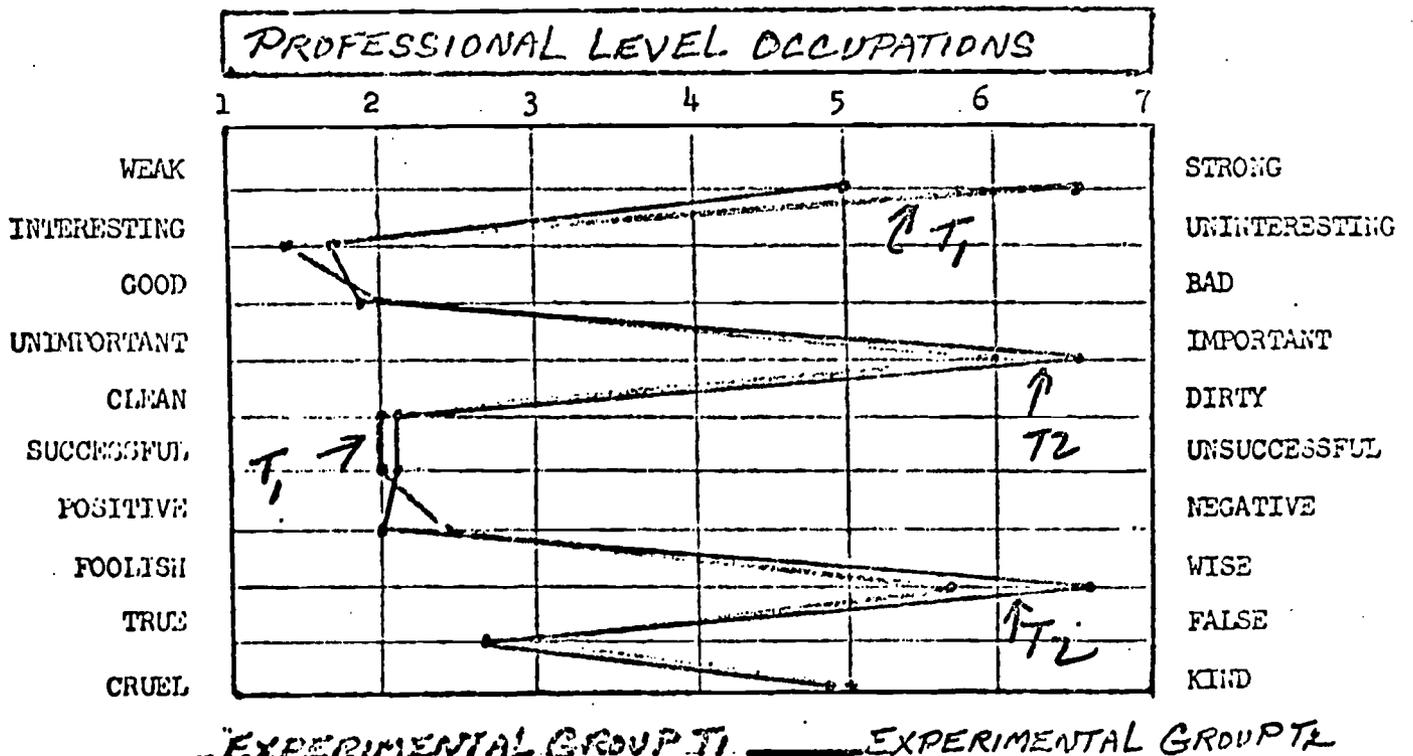


TABLE 7

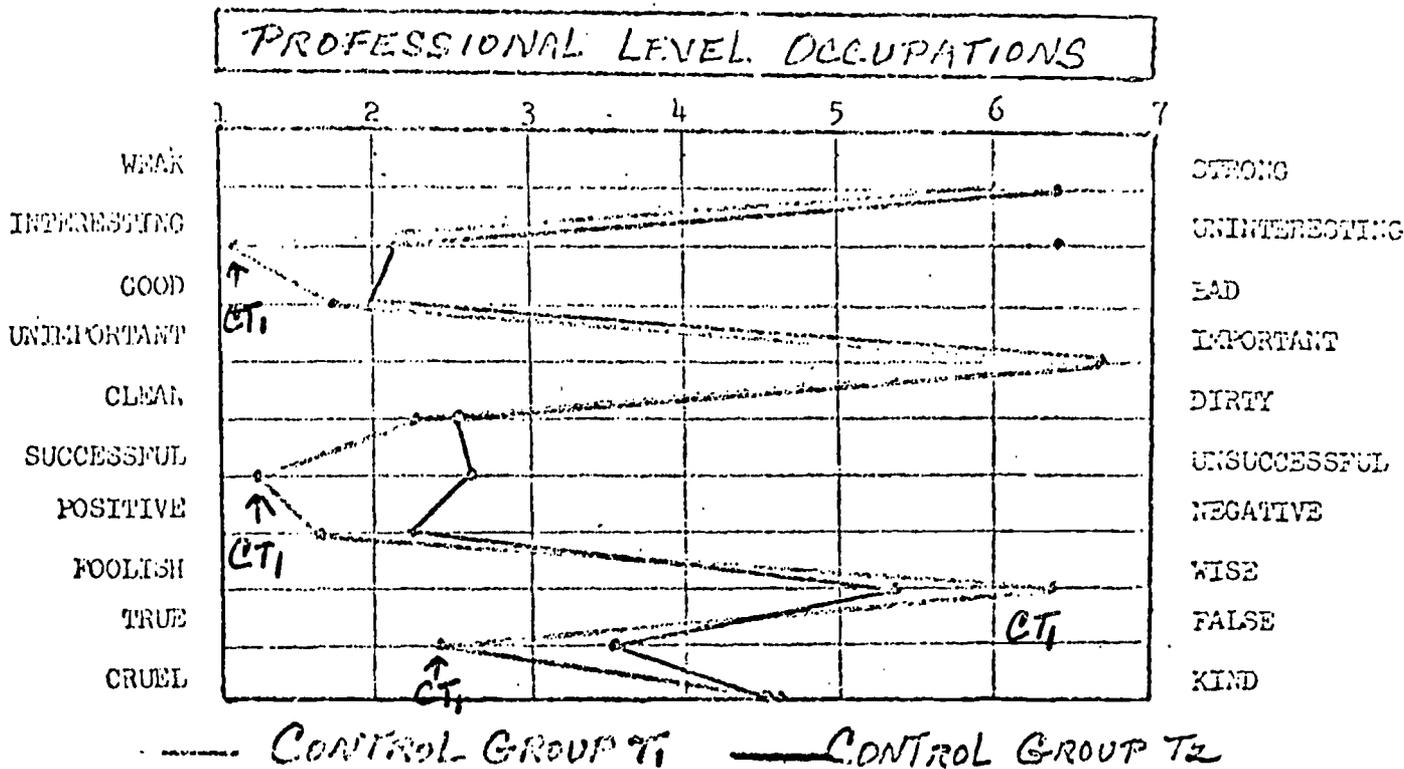


TABLE 8

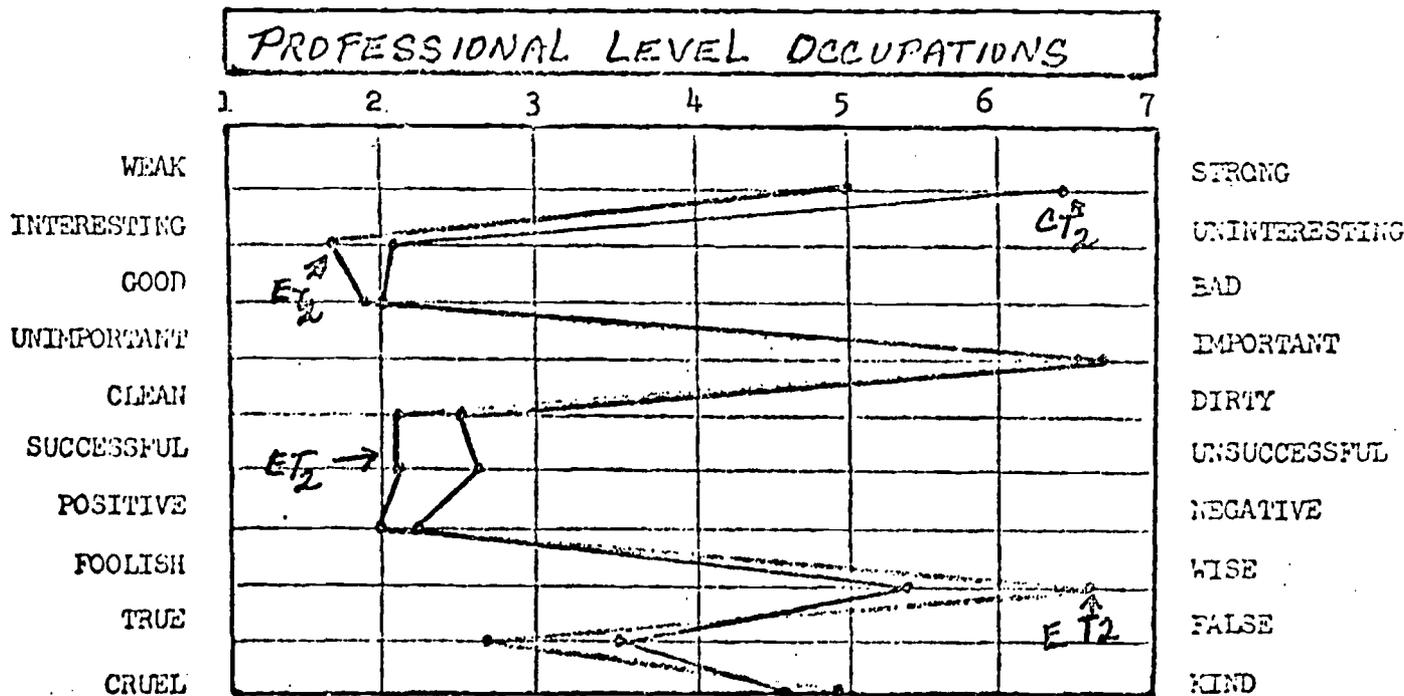


TABLE 9

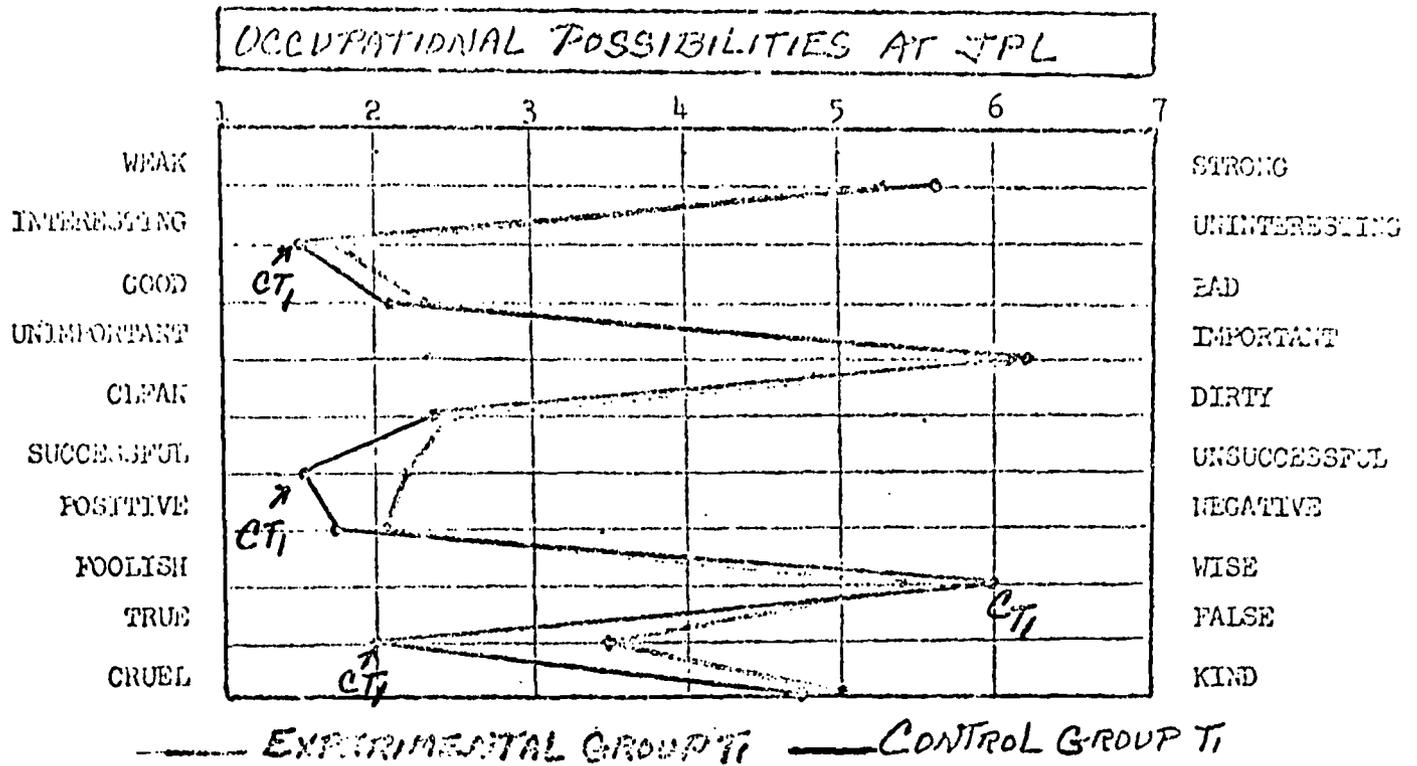


TABLE 10

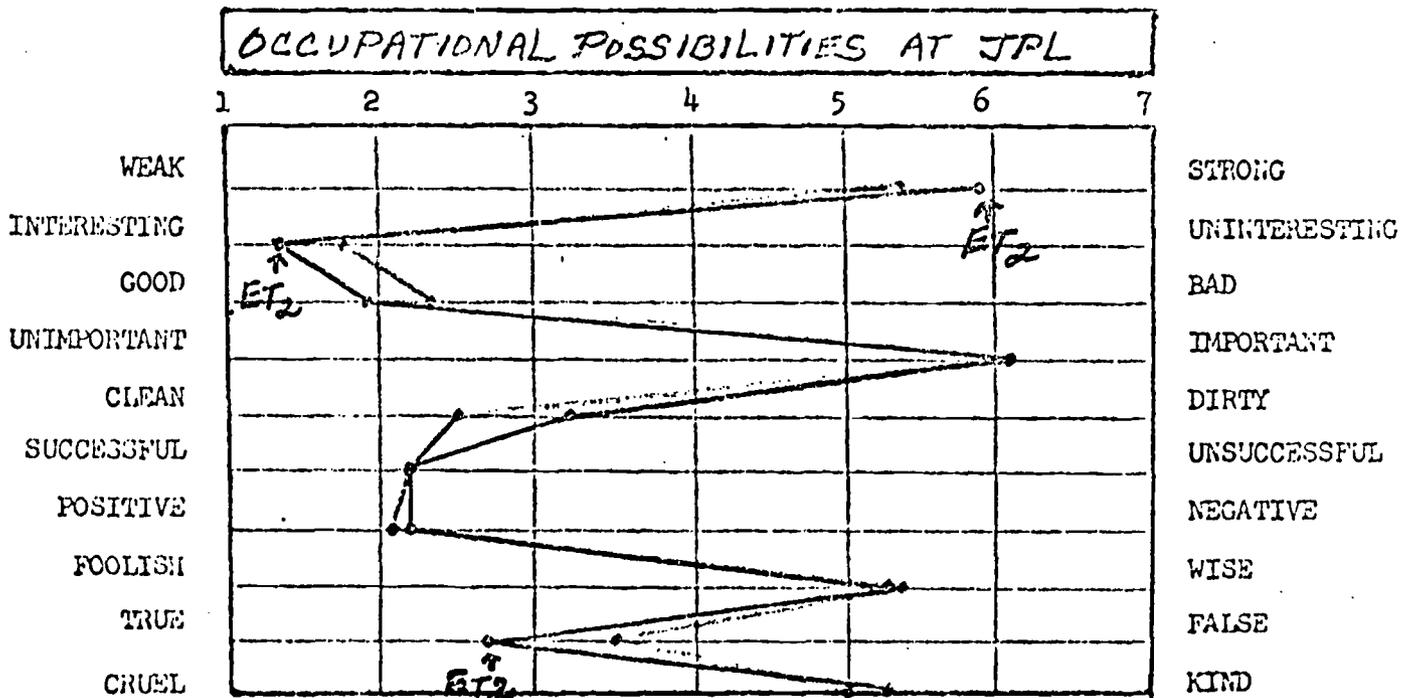


TABLE 11

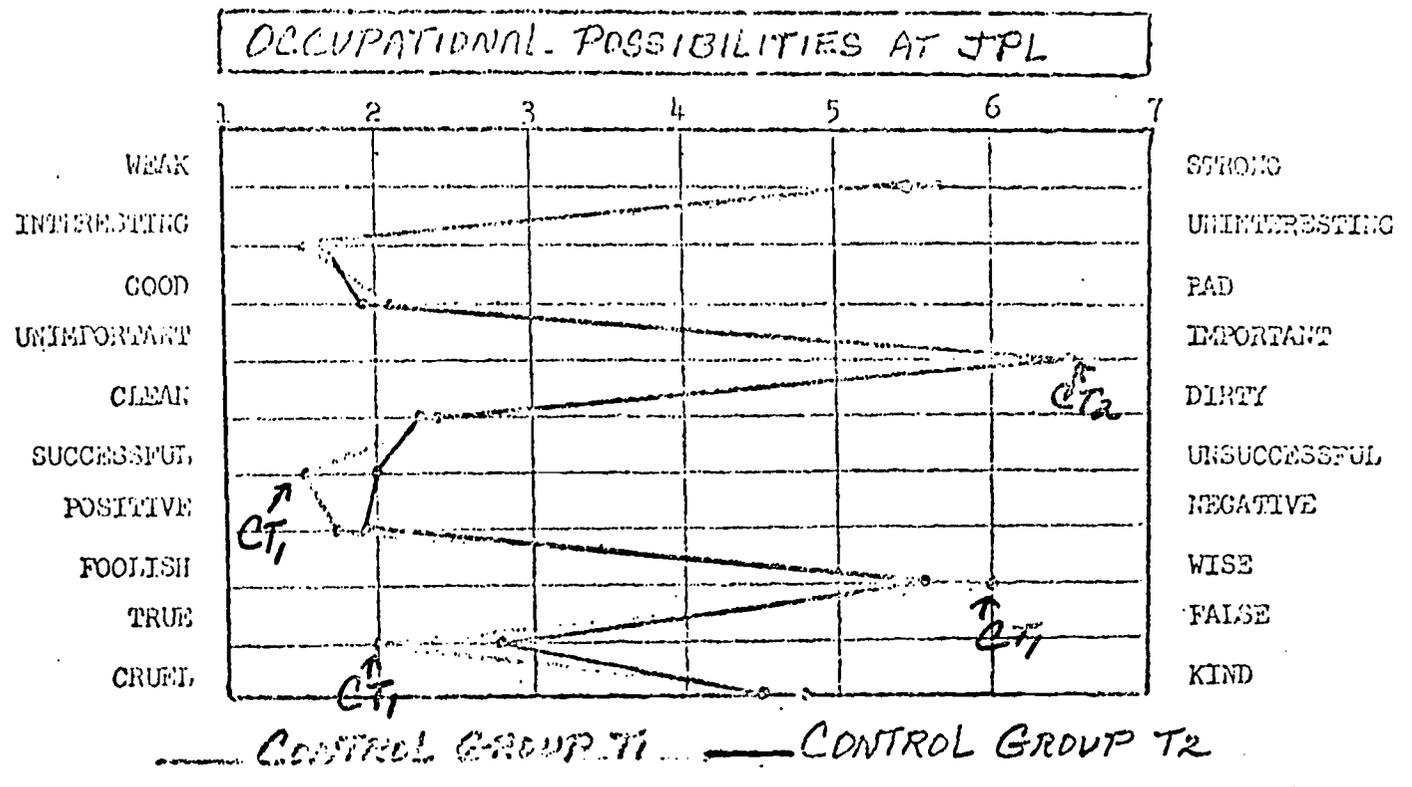


TABLE 12

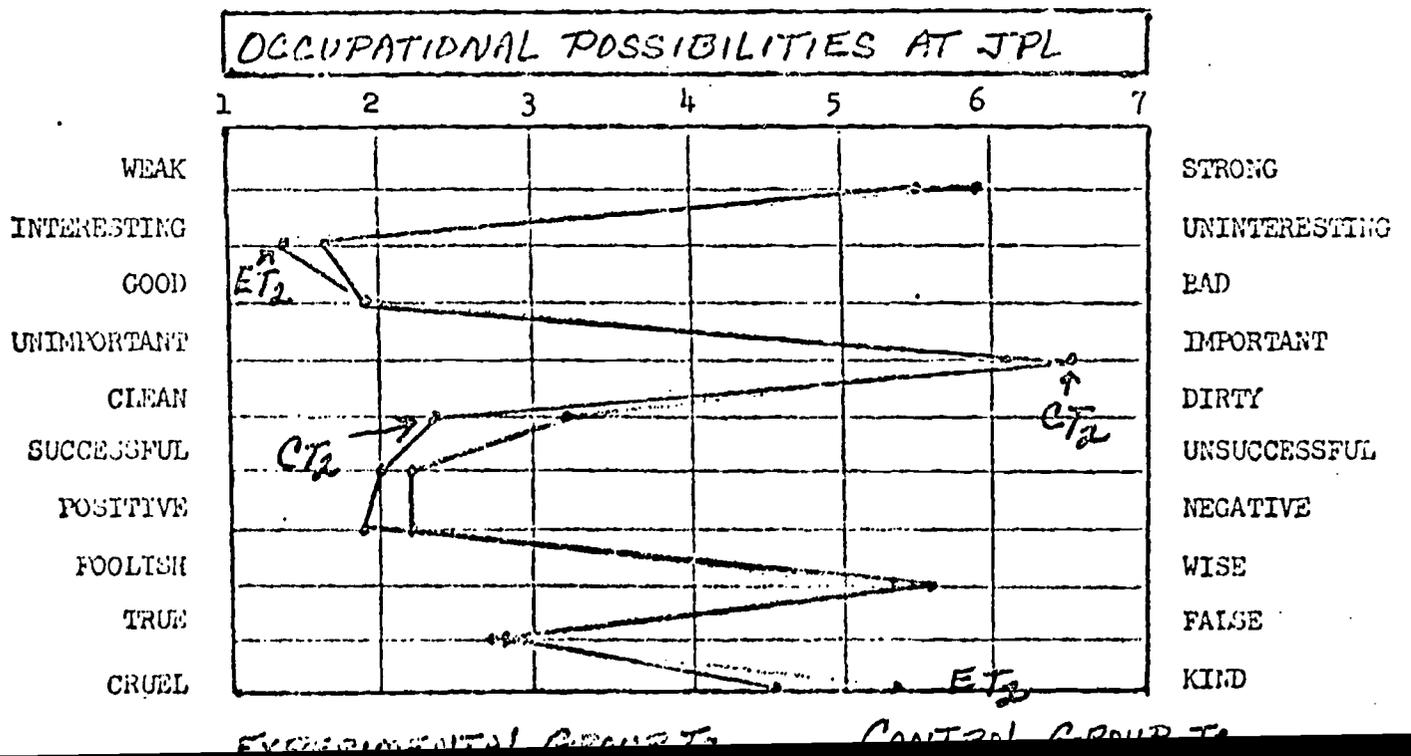


TABLE 13

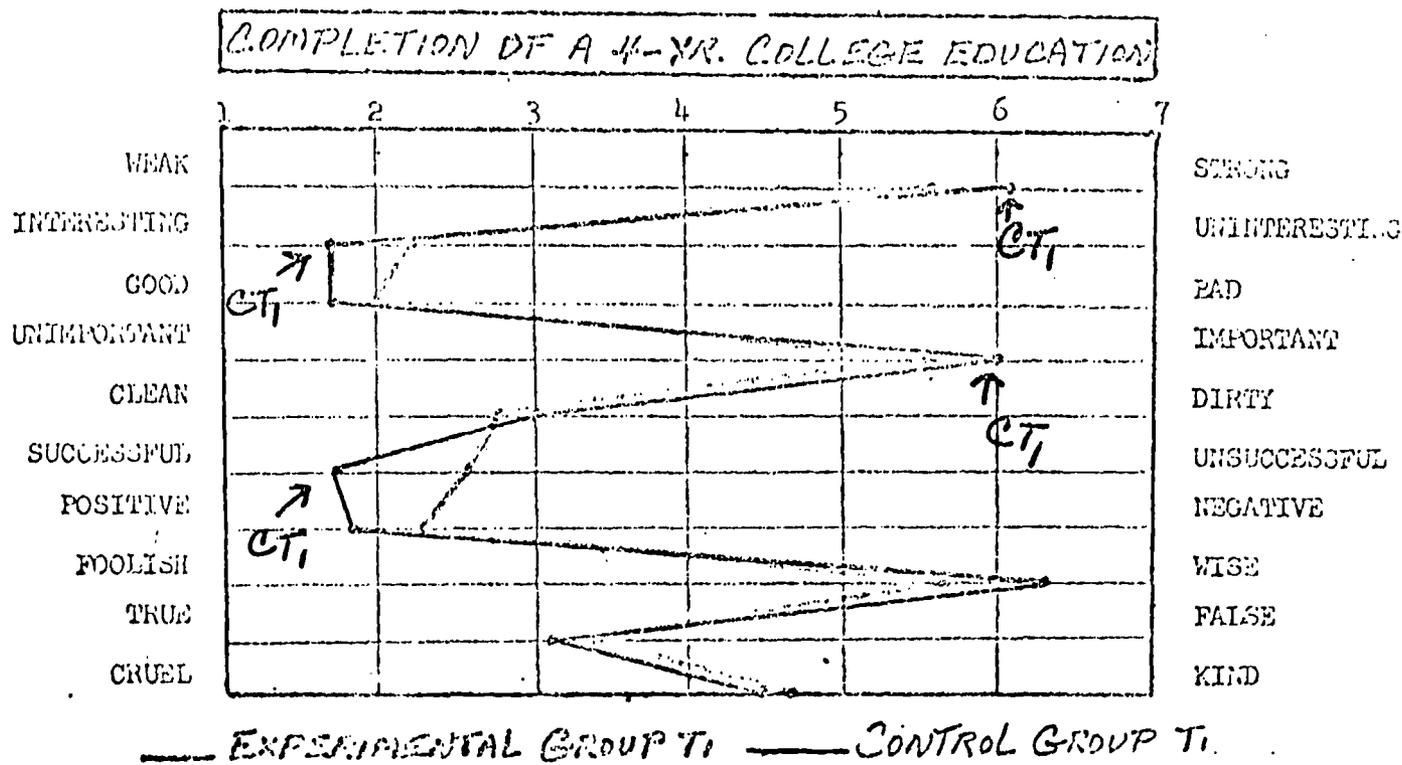


TABLE 14

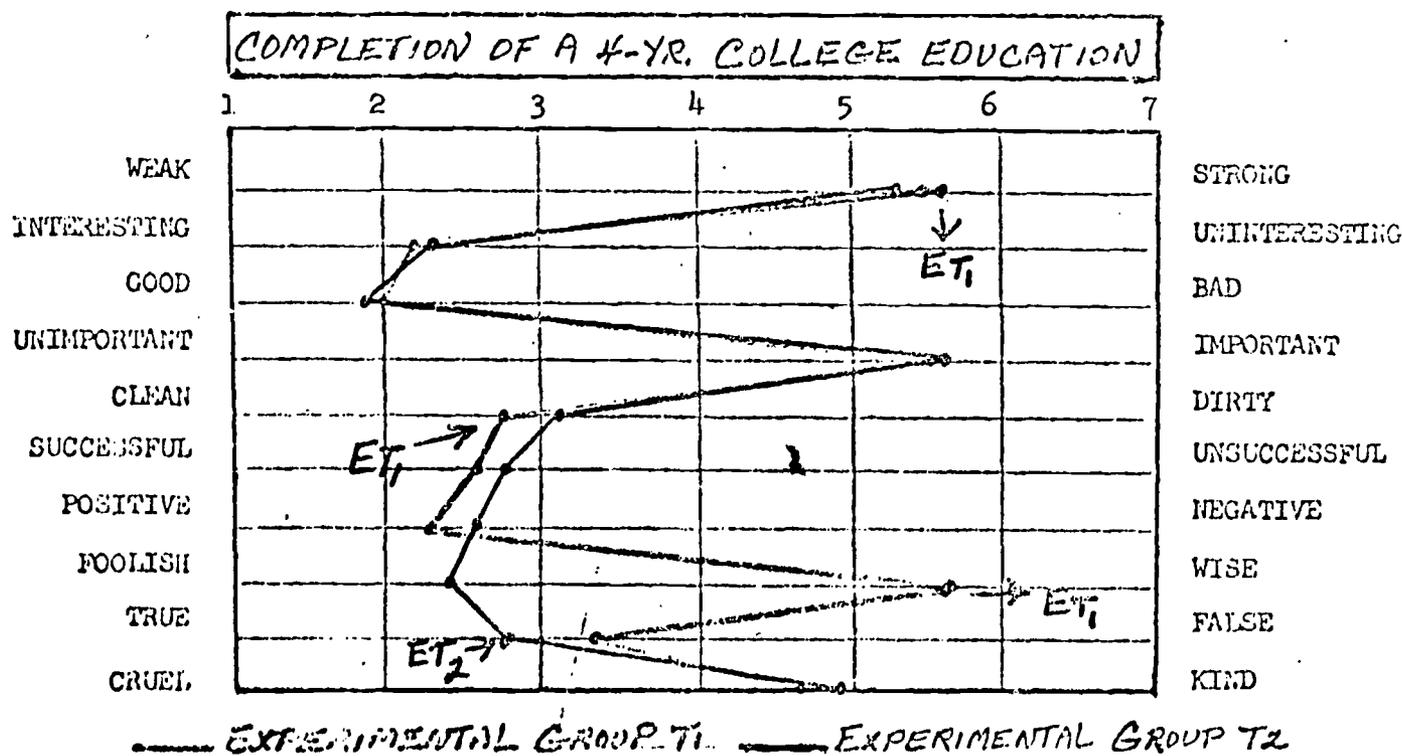


TABLE 15

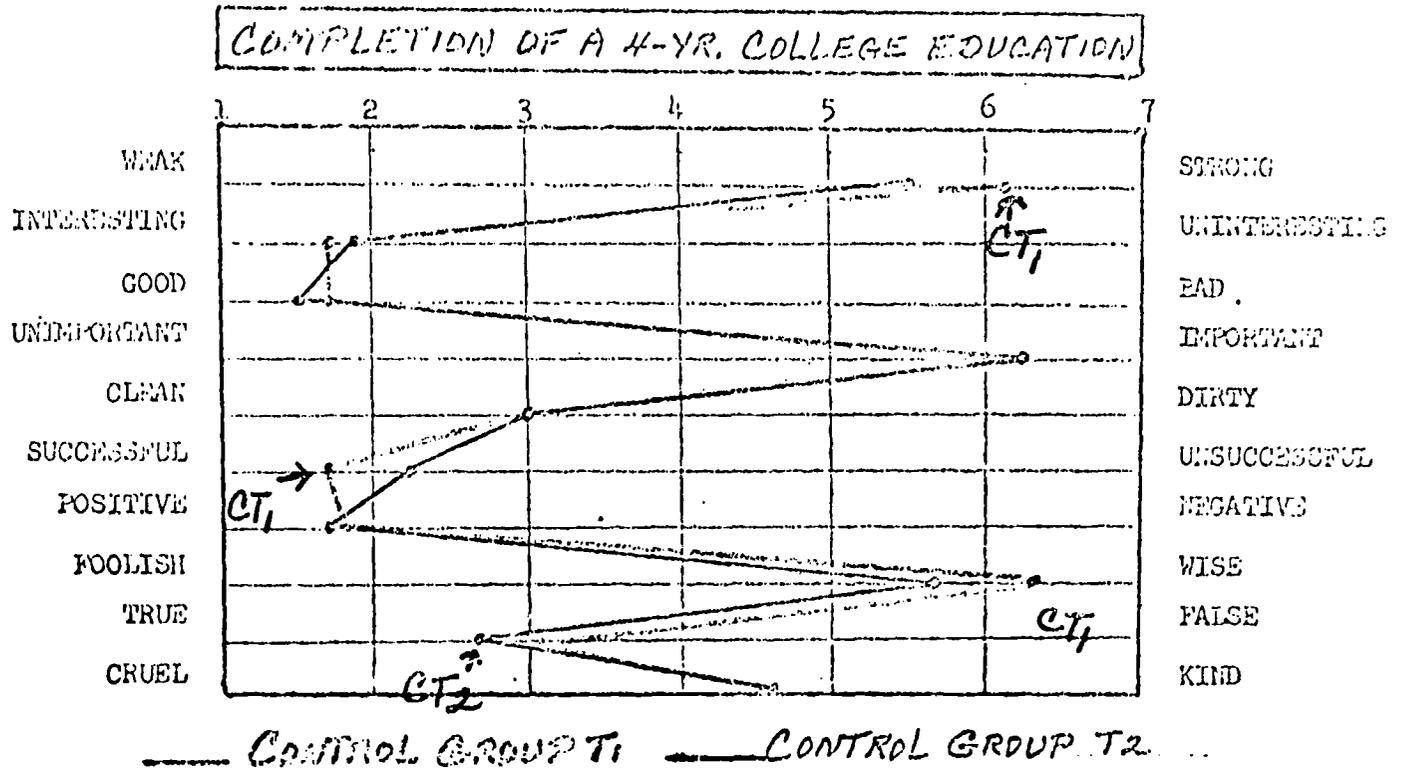


TABLE 16

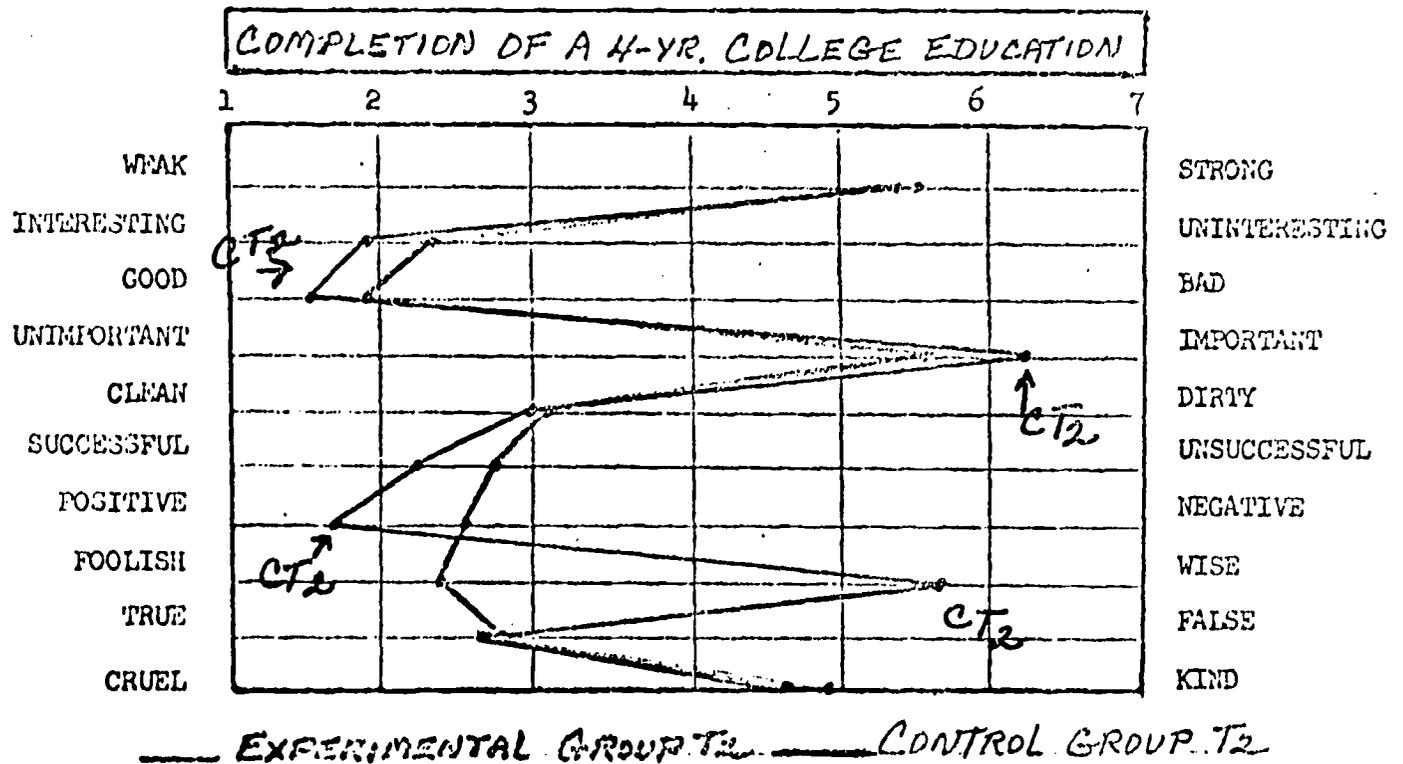


TABLE 17

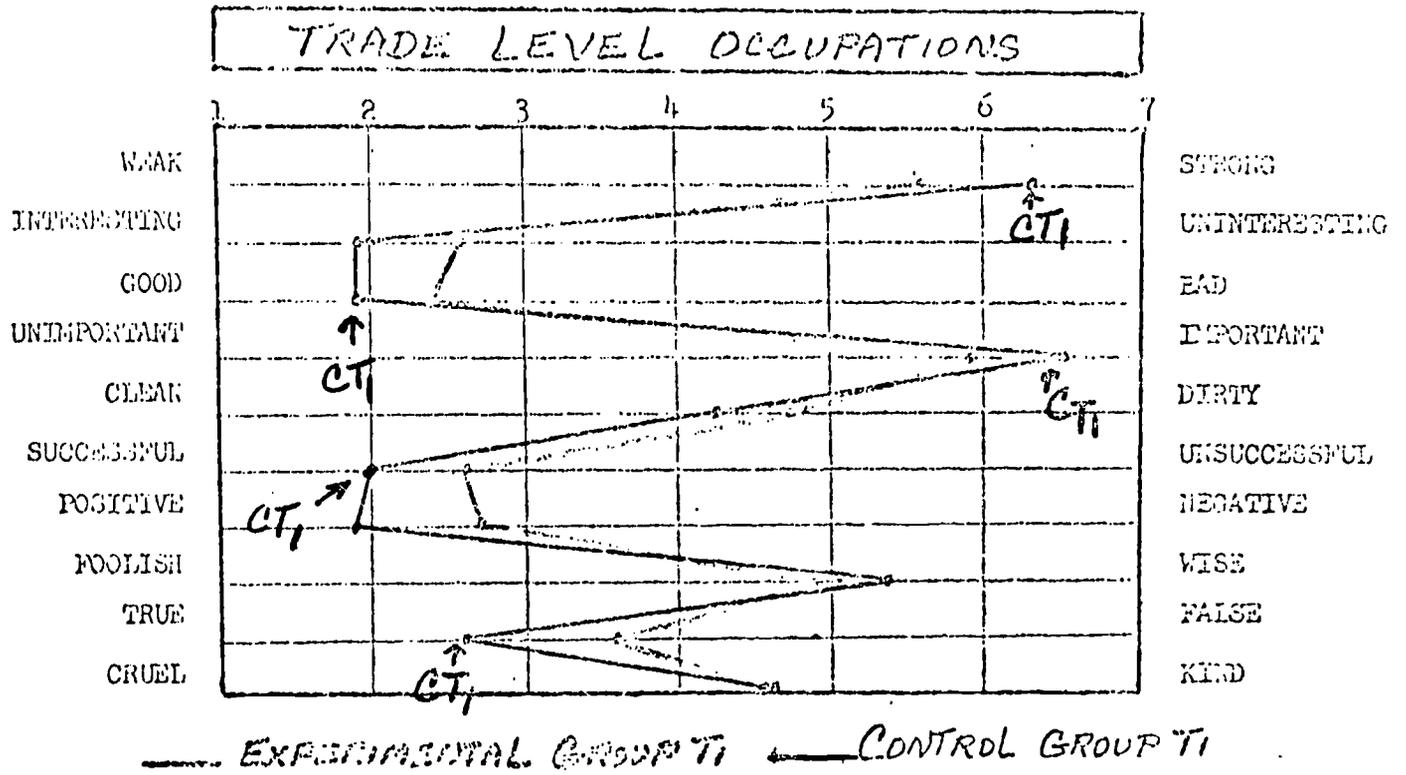


TABLE 18

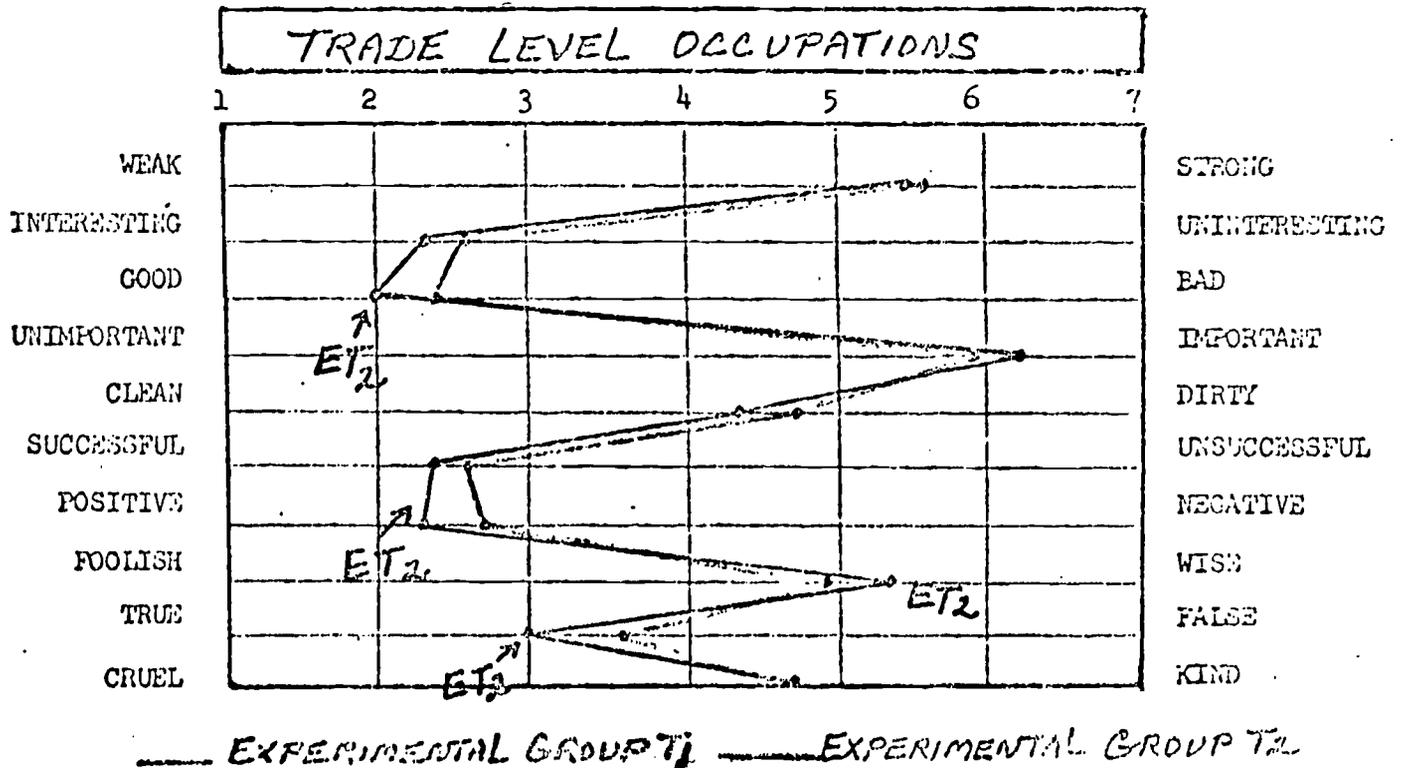


TABLE 19

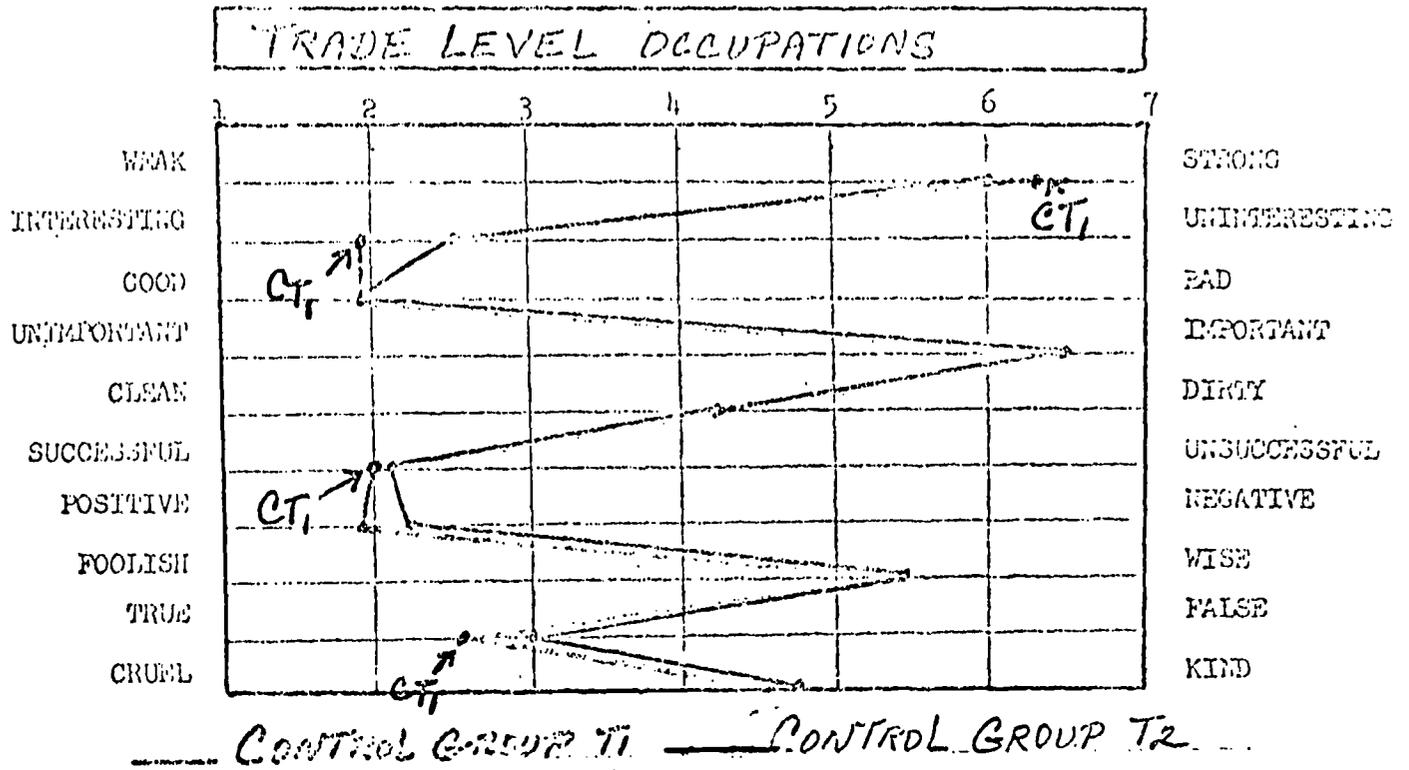


TABLE 20

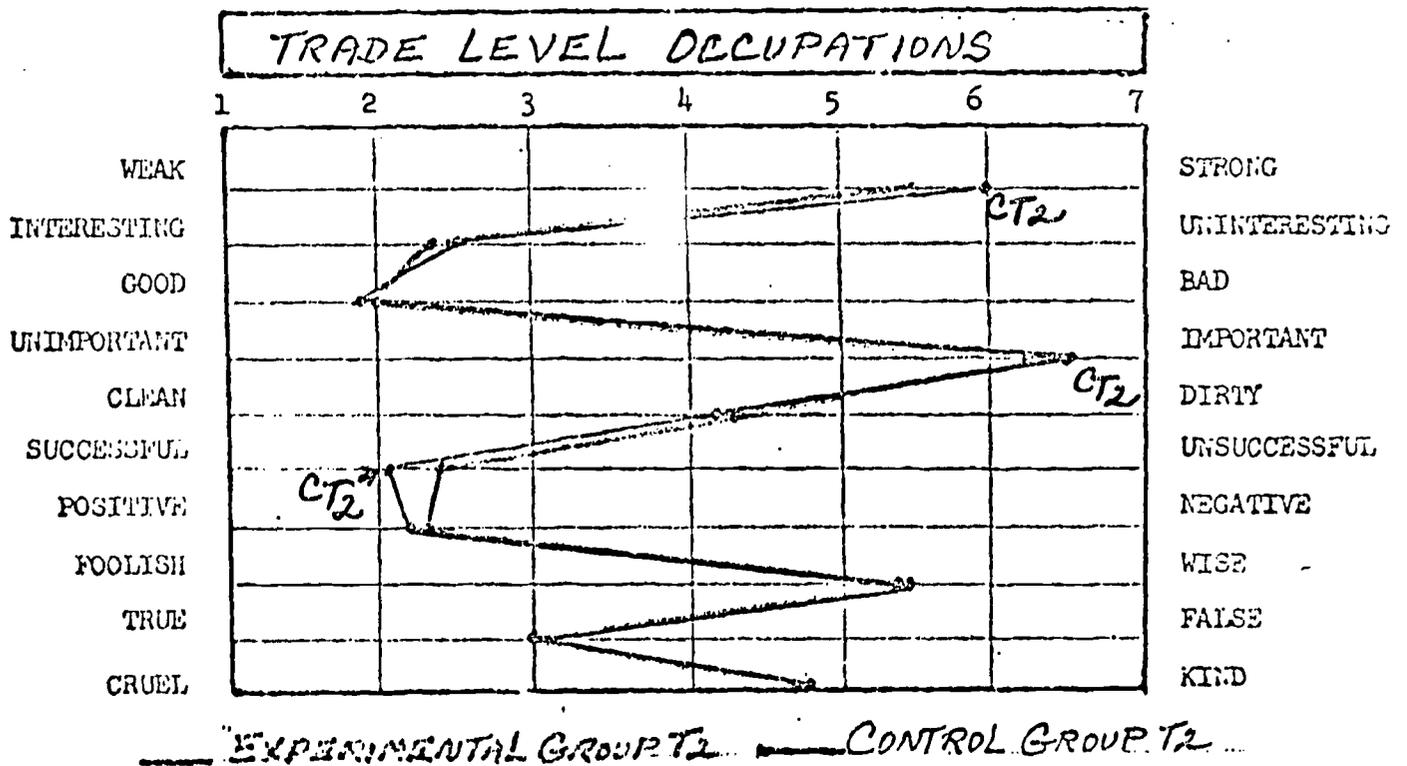


TABLE 21

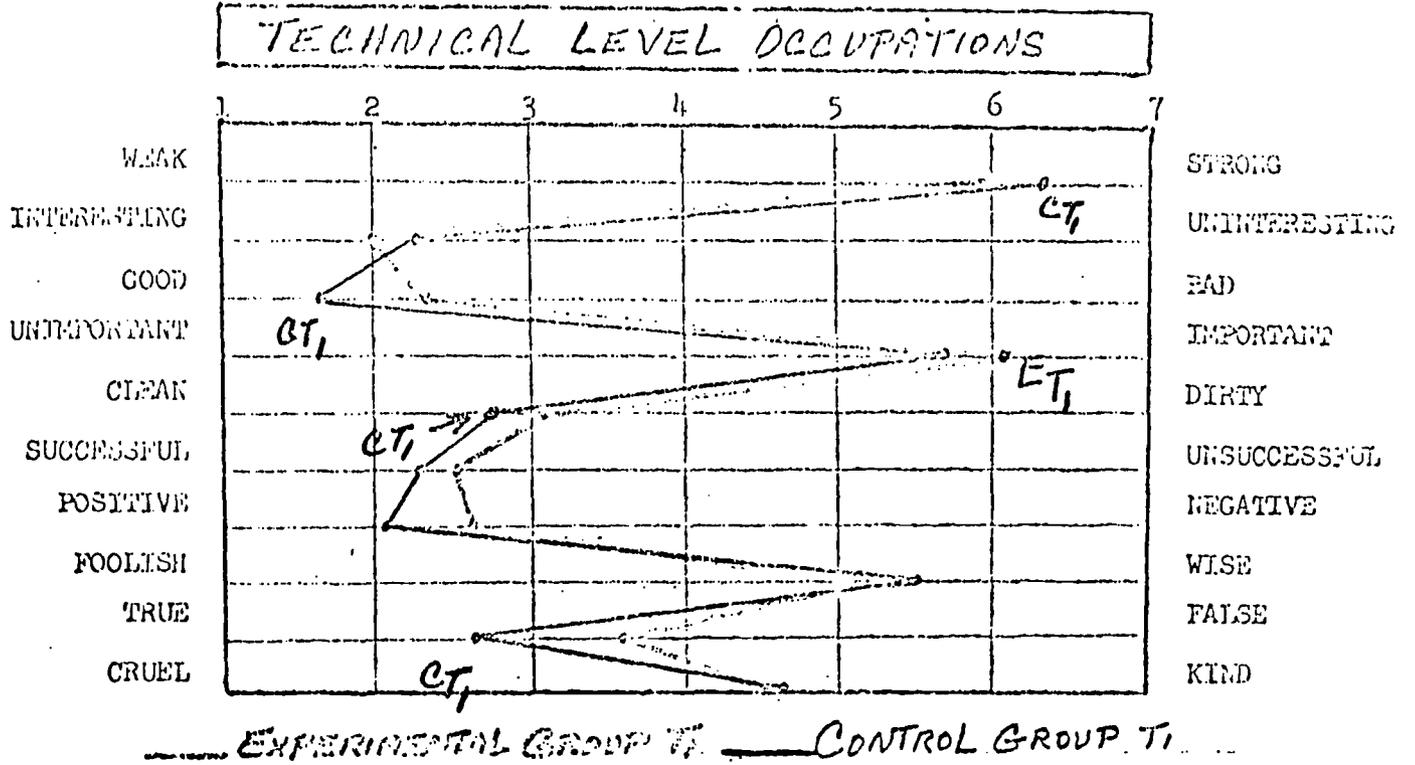


TABLE 22

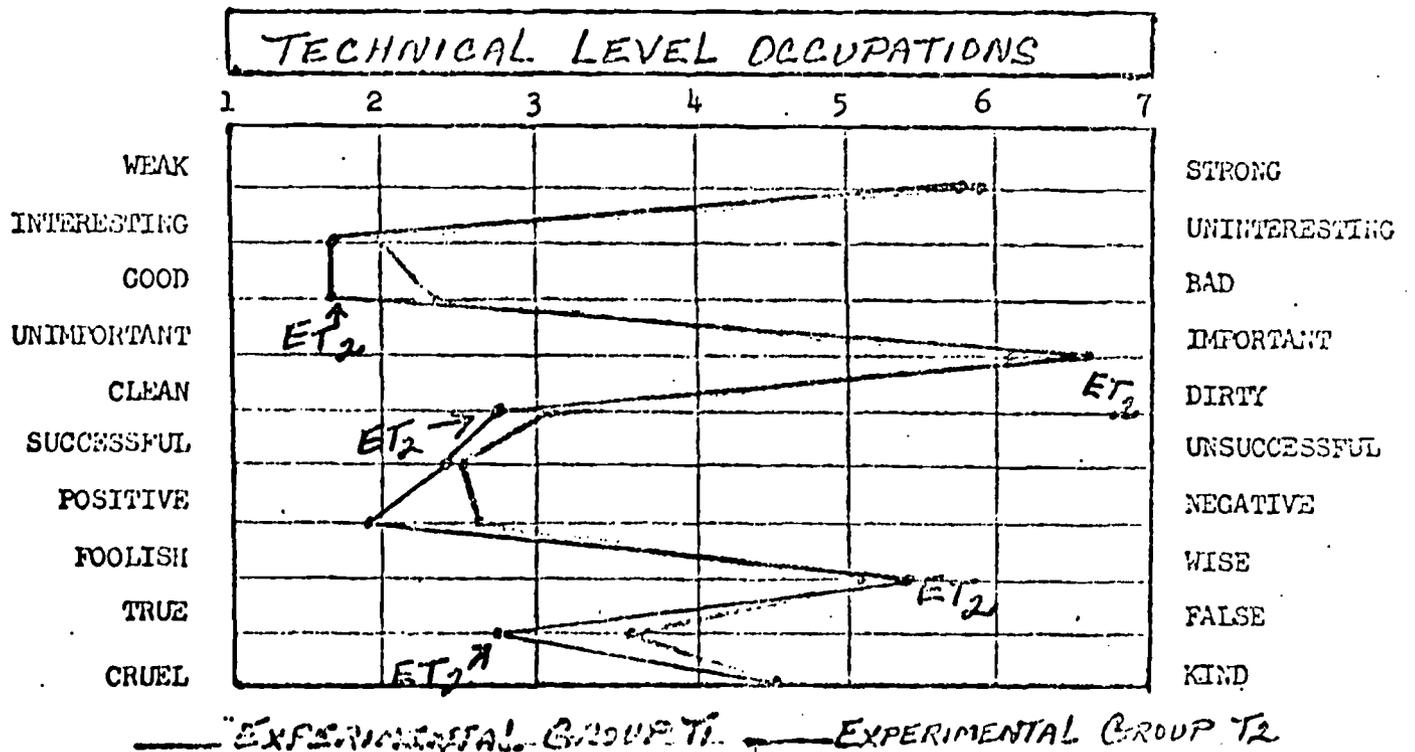


TABLE 23

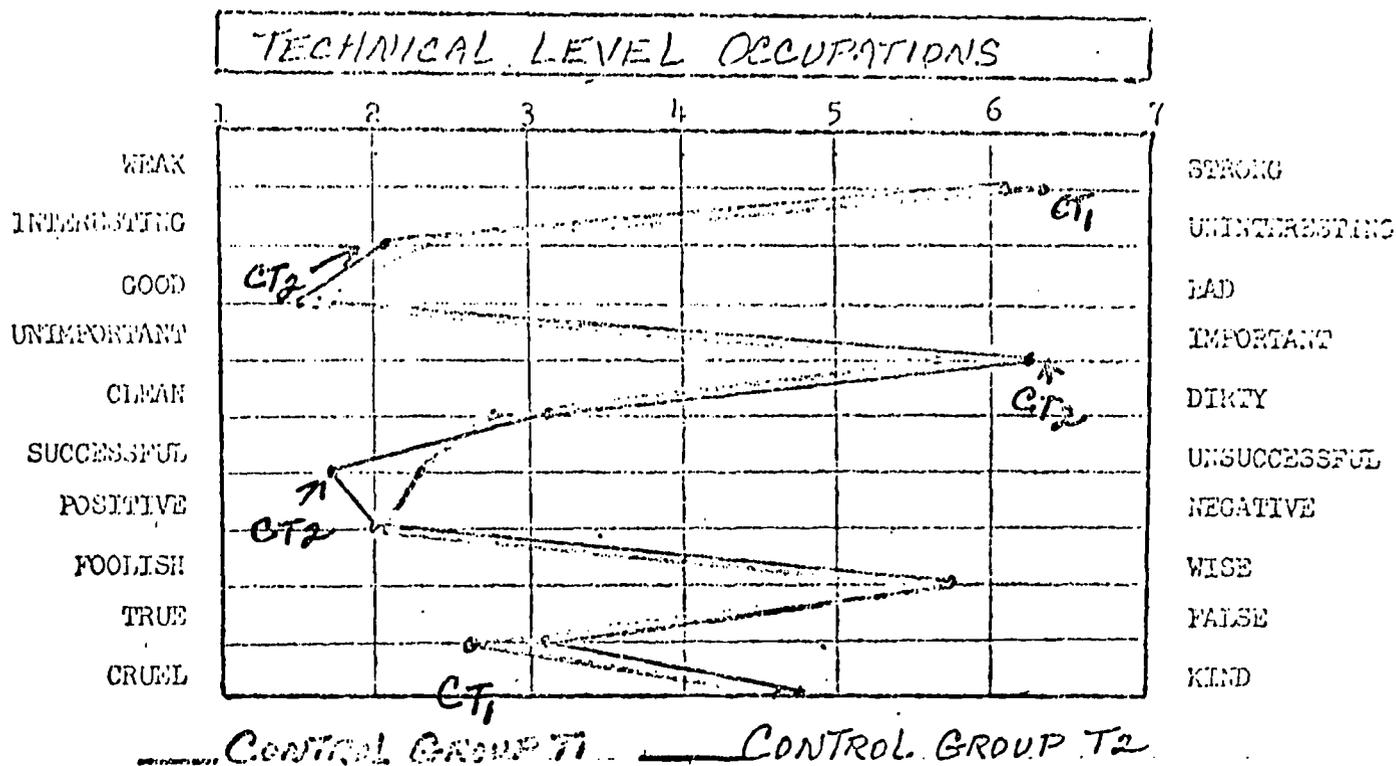


TABLE 24

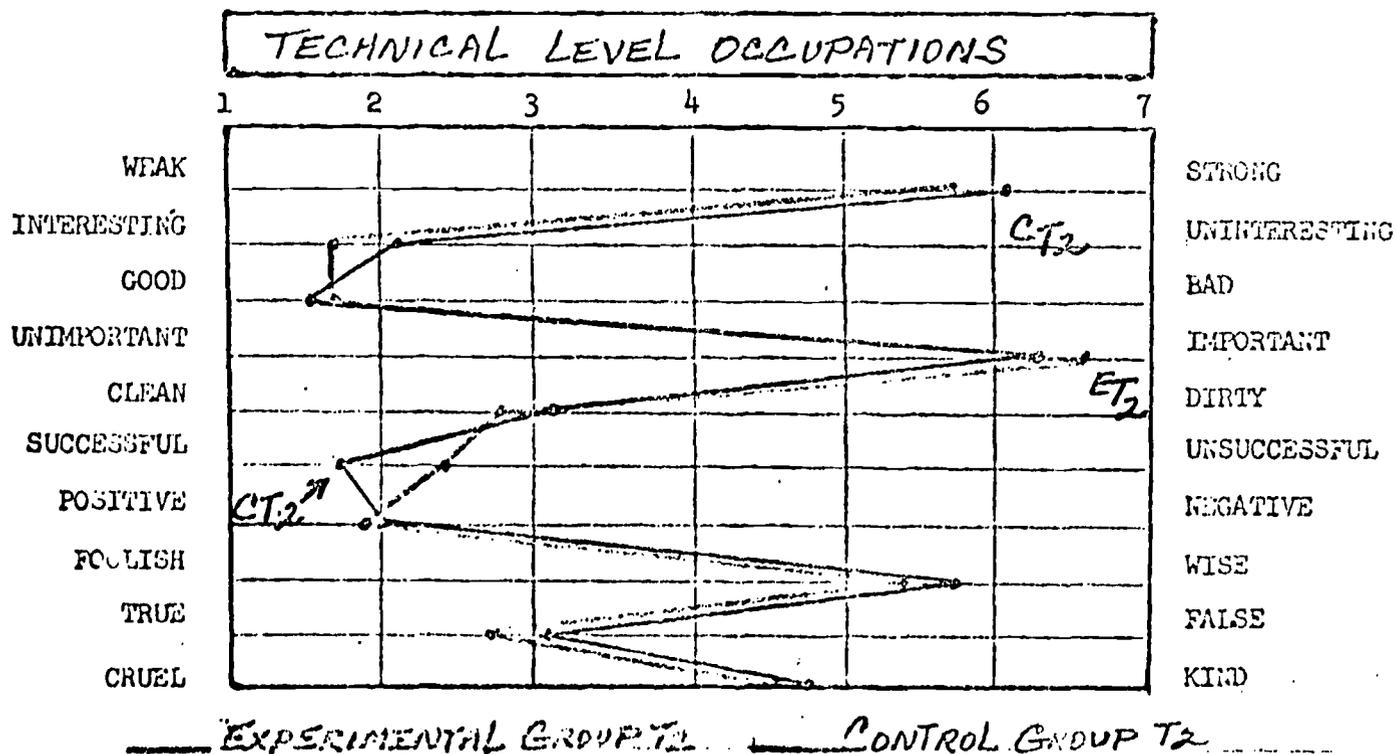


TABLE 25

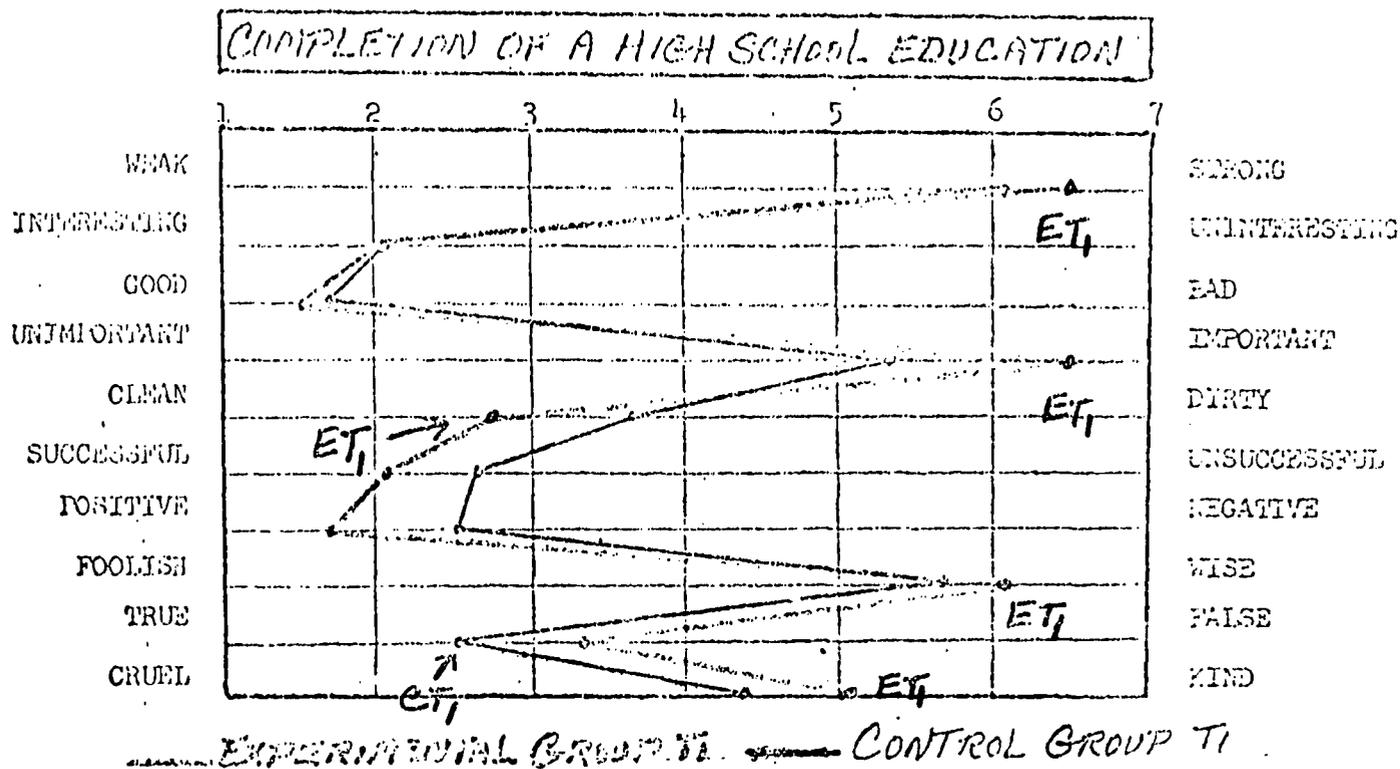


TABLE 26

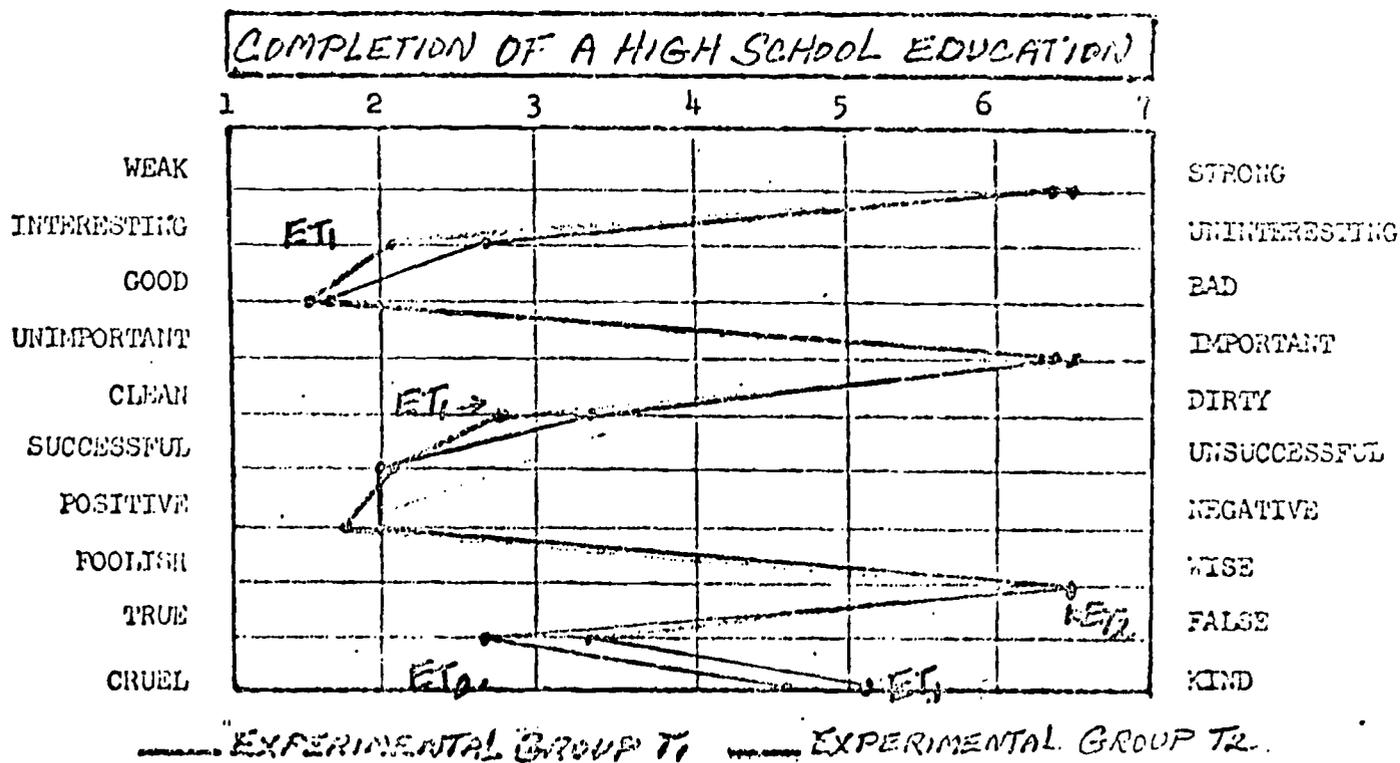


TABLE 27

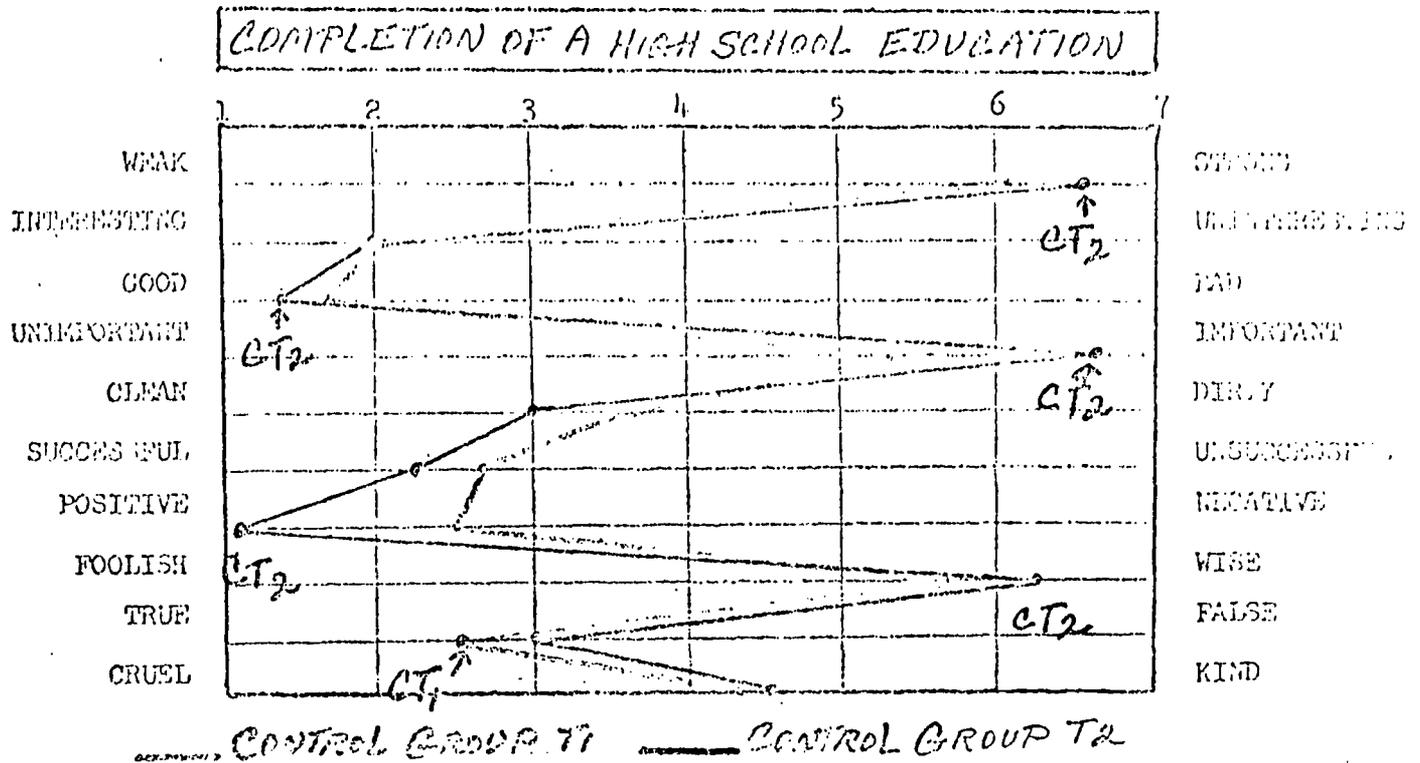
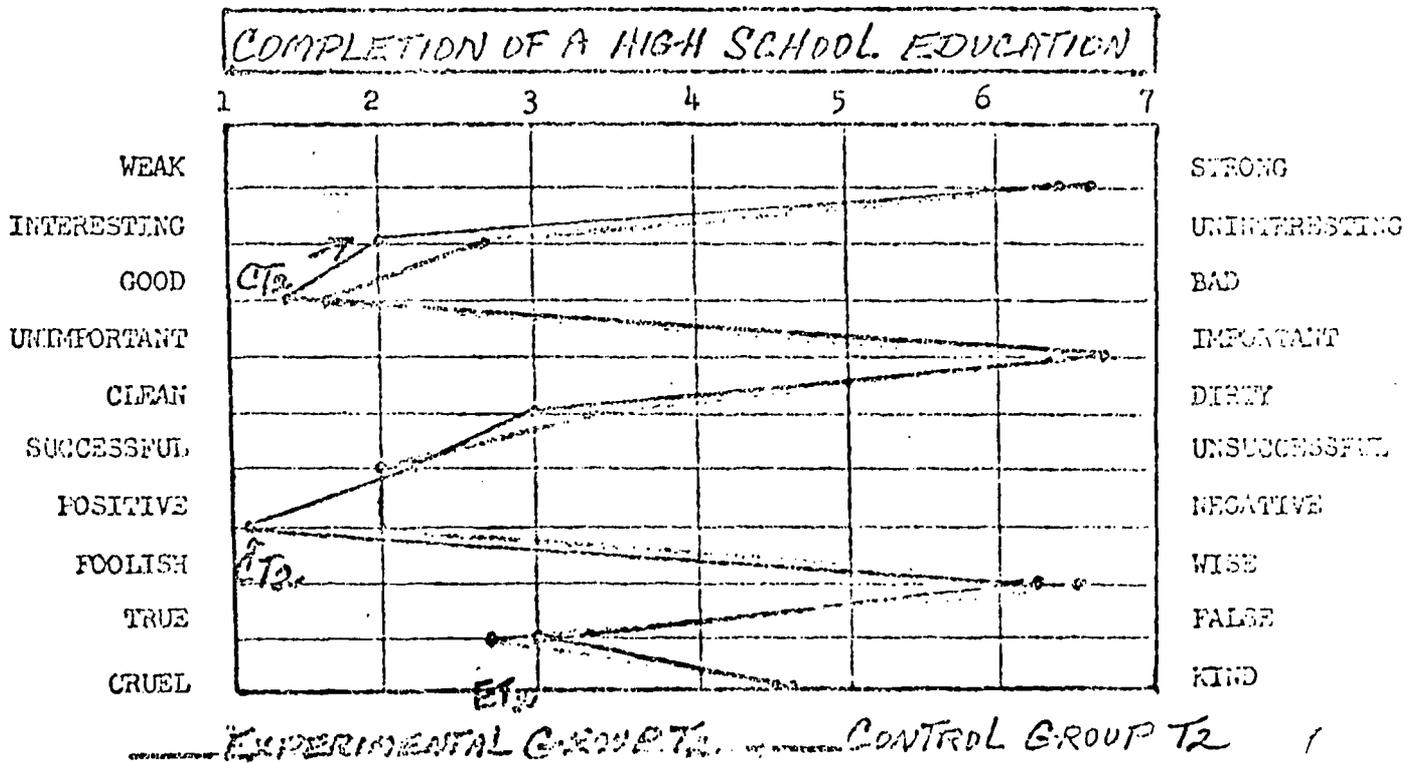


TABLE 28



Occupational Possibilities at JF

Results on this concept showed both groups rating the concept as: Strong, Interesting, Good, Important, Clean, Successful, and Positive. There were no significant differences in ratings between the groups on any of the comparisons.

Completion of a Four Year College Education

Adjectives describing this concept as rated by both groups included the following: Strong, Interesting, Good, Important, Positive, and Wise. On T_1 the experimental group rated the concept as generally Foolish but on T_2 there was a pronounced shift in the rating toward Wise. There were no other significant differences in ratings on this concept.

Trade Level Occupations

As viewed by both groups this concept was rated as: Strong, Interesting, Good, Important, Successful, and Positive. There were no significant differences in the ratings by the groups on any of the comparisons.

Technical Level Occupations

Adjectives selected by both groups to rate this concept were: Strong, Interesting, Good, Important, Successful, Positive, and Wise. There were no significant differences between the groups on any of the comparisons.

Completion of a High School Education

Both groups rated this concept as: Strong, Interesting, Good, Important, Successful, Positive, and Wise. On T_1 the experimental group rated the concept significantly more Important than did the control group. On T_2 , however, the control group rated the concept significantly more Important than it did on T_1 . The control group also rated the concept as significantly more positive on T_2 than on T_1 .

The most noteworthy features of the findings on the EDPA Evaluation Test, Part II were the trend toward consensus in ratings by the two groups as well as the lack of significant changes in ratings.

Most of the initial as well as the post ratings of the various concepts by both groups were what generally would be considered as favorable.

Thus, with high initial ratings the possibility of producing a more positive change in the ratings was greatly reduced. It would have to be concluded that the findings on this test showed two factors:

(1) counselors in both groups were favorable in their attitudes toward the six educational/vocational concepts rated, and (2) the experiences within the summer program had little, if any, effect upon changing the nature or direction of these attitudes.

Counselors in the PCC experimental and control groups were administered the EPDA Evaluation Test, Part II under pre and post test conditions. Tables 29 - 34 show the results of these tests. Mean scores for T_1 and T_2 are included in Appendix E. A review of Tables 29 - 34 and Appendix E reveals that only one of the sixty pre and post test ratings reflected a significant change. A review of the ratings conducted by the PCC counselors with those indicated by the high school counselors in the experimental and control groups showed a very high degree of similarity and, in general, the conclusions previously stated also would be valid for the PCC counselors in this study.

TABLE 29

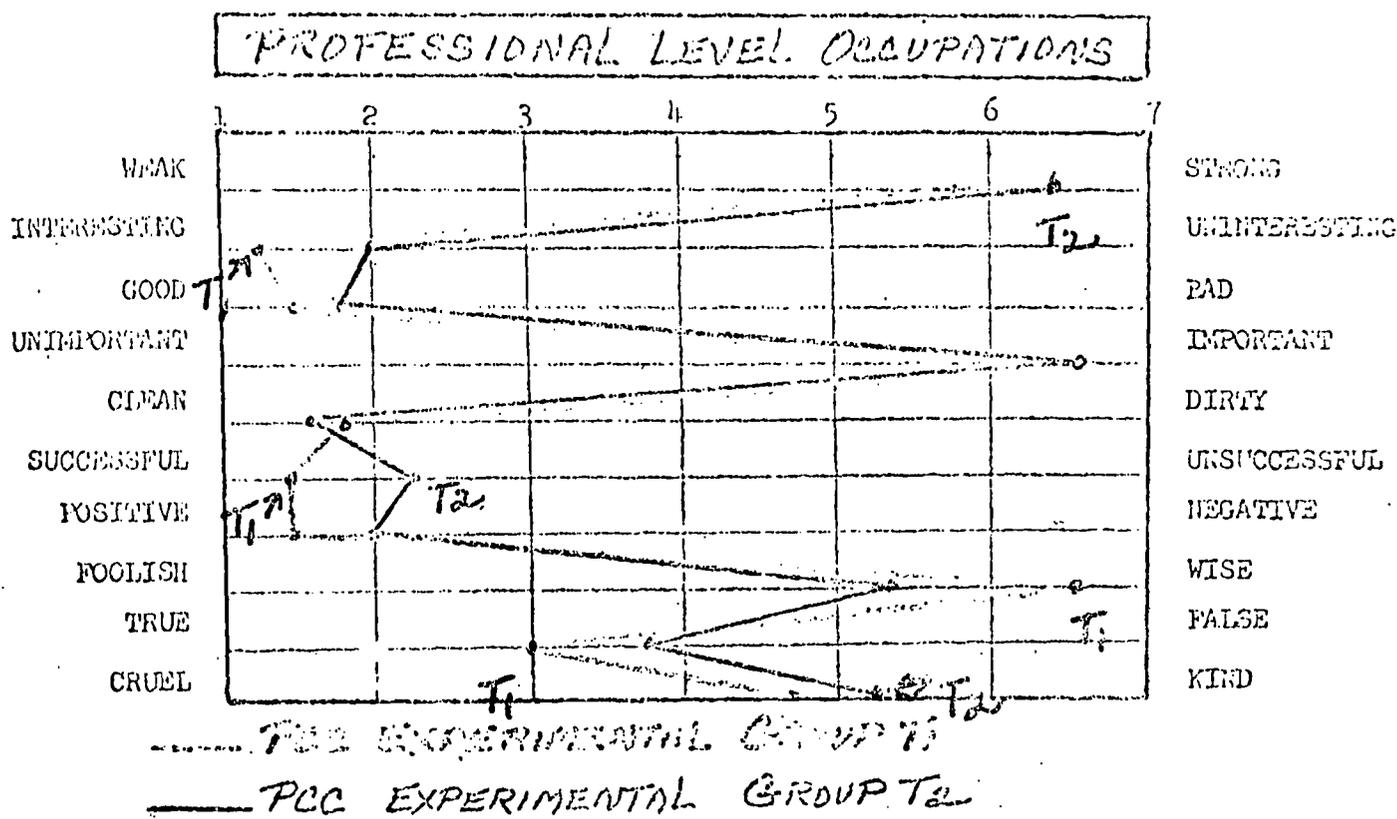


TABLE 30

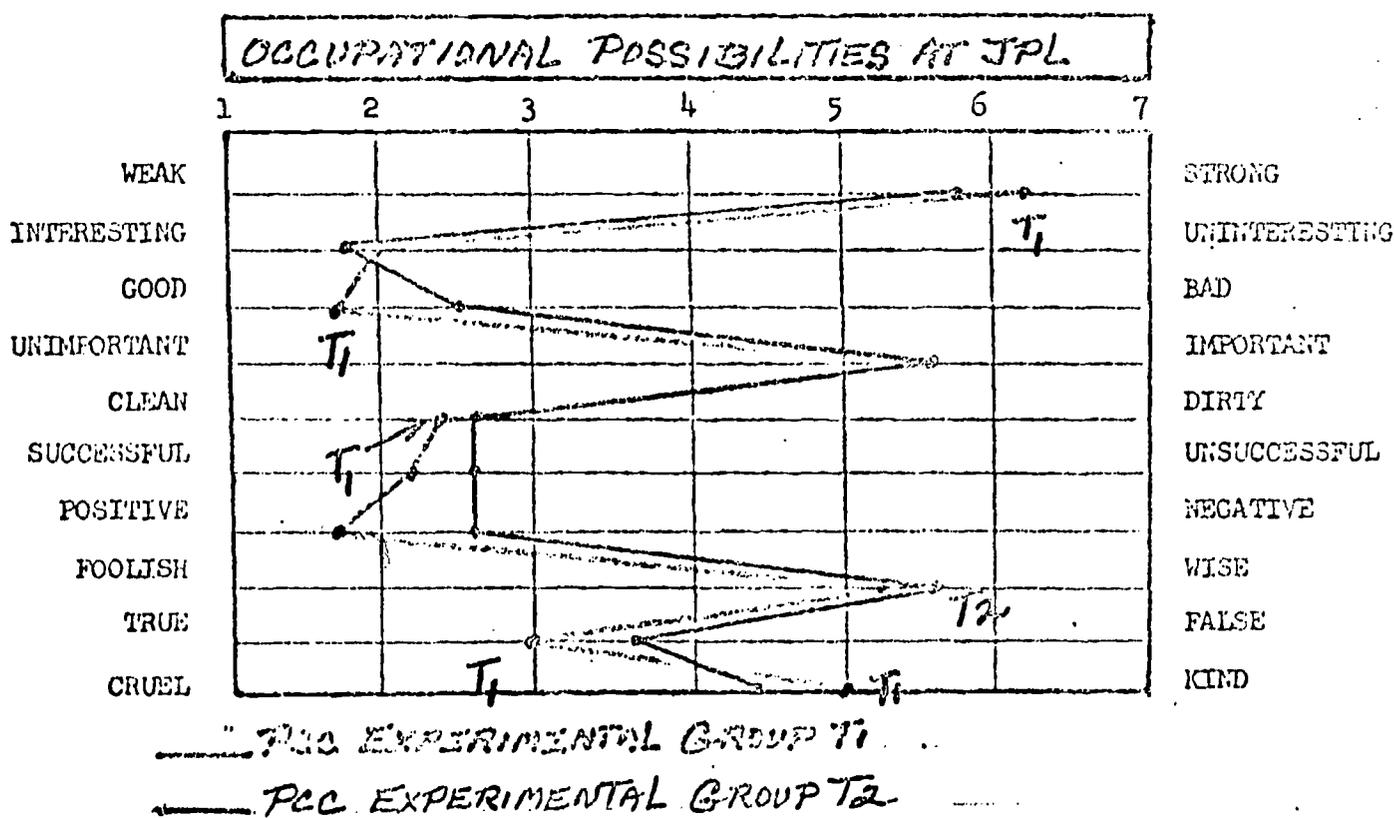


TABLE 31

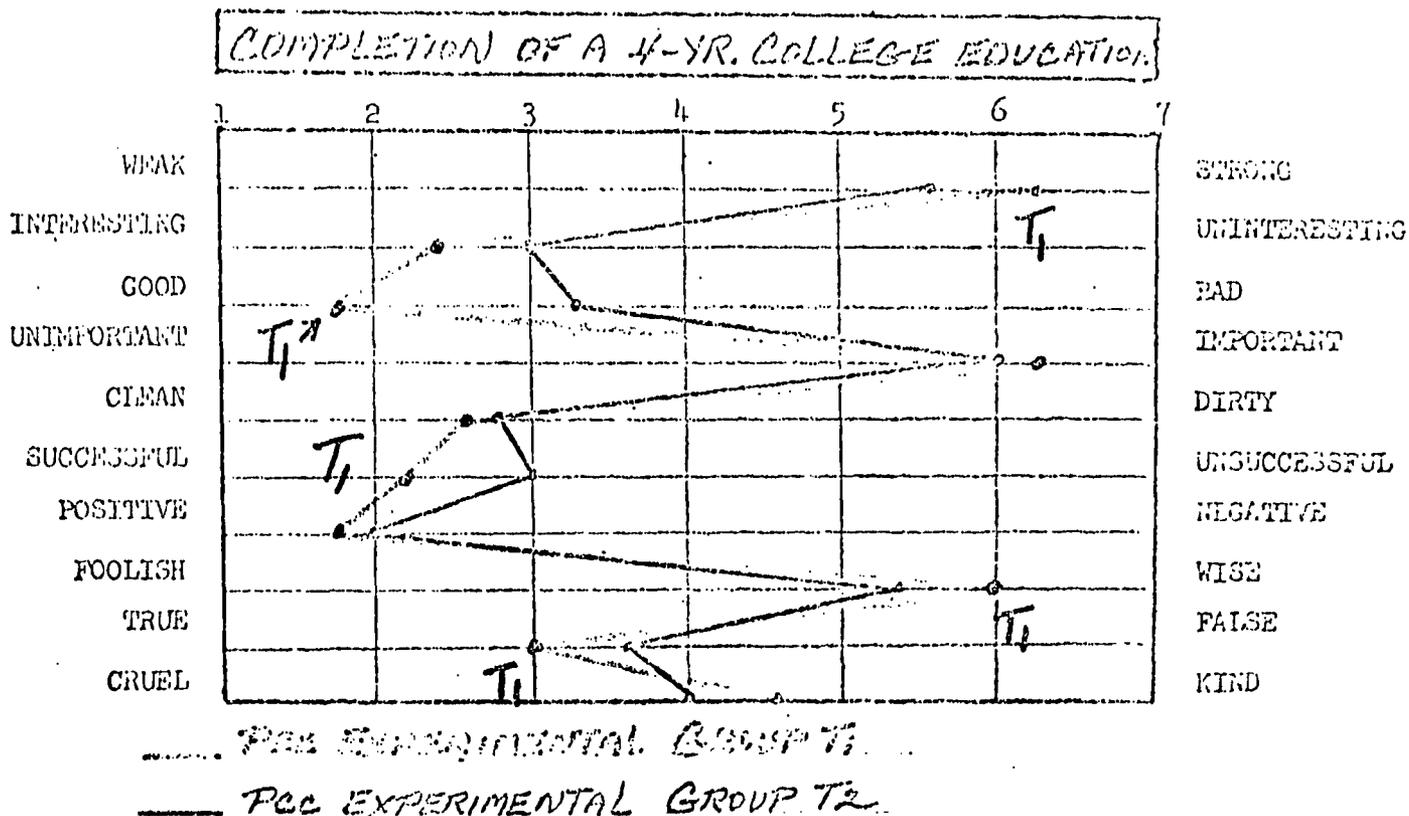


TABLE 32

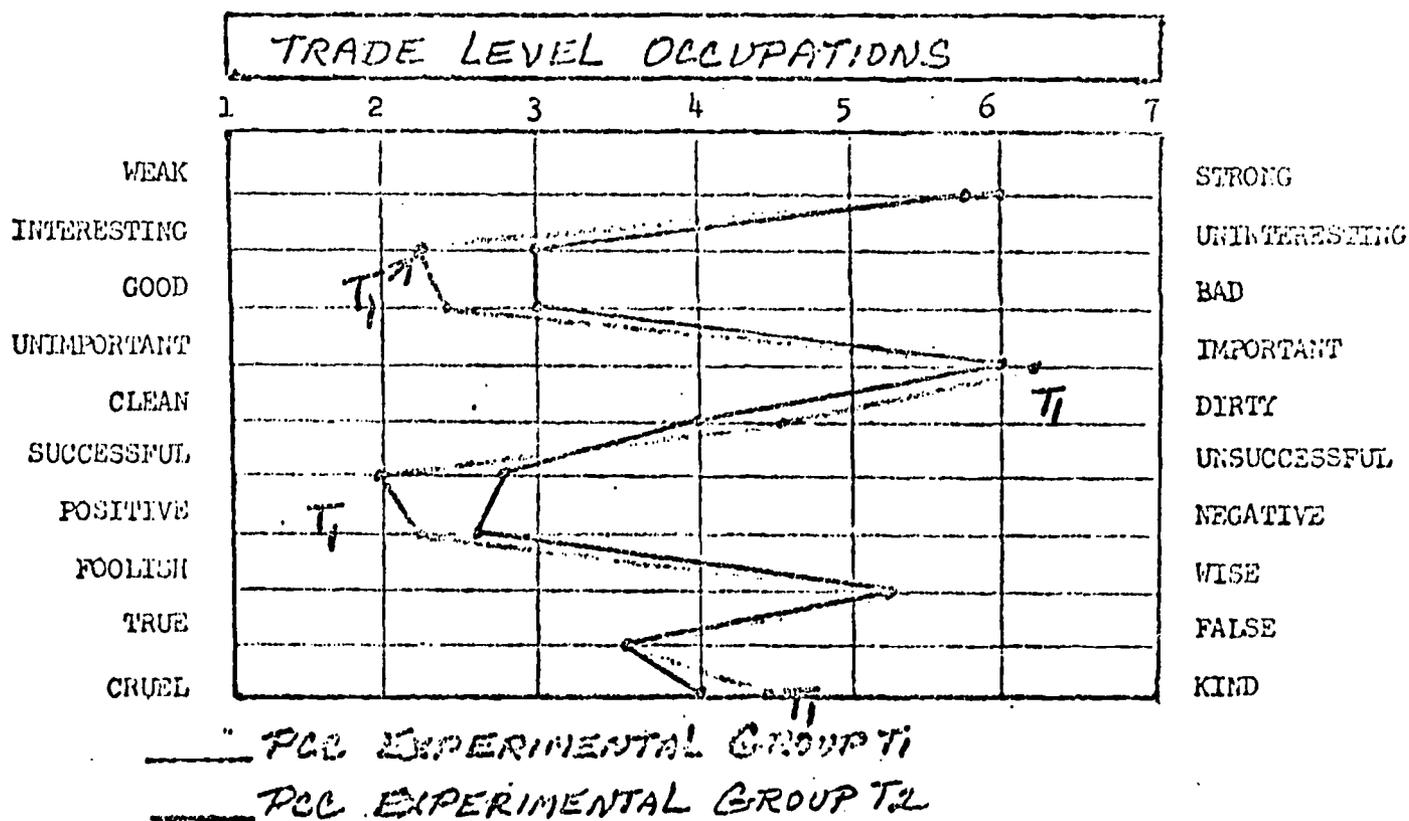


TABLE 33

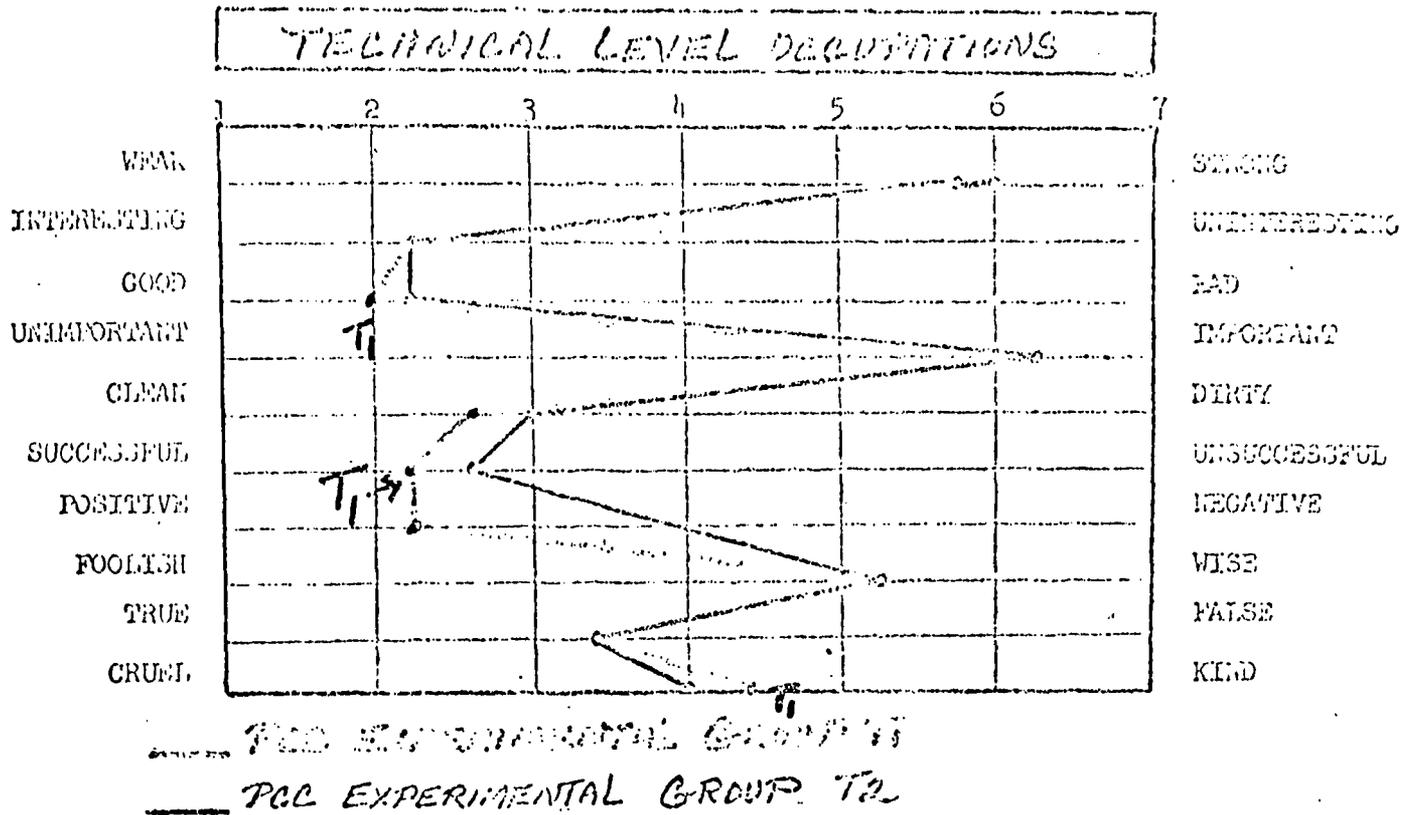
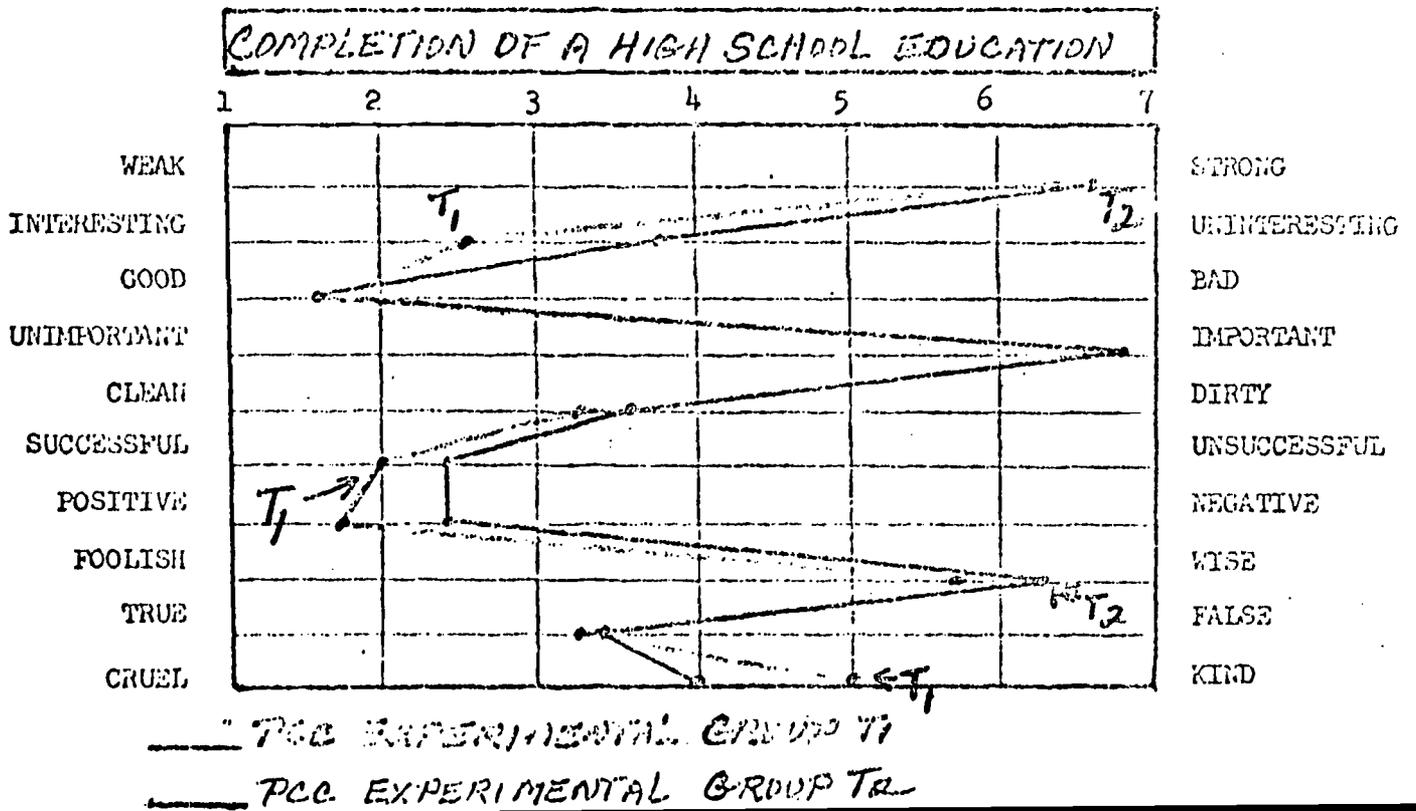


TABLE 34



III. Summary Assessment as Determined by a Questionnaire as Well as the Personal Assessment of the Project Evaluator.

The JPL Questionnaire was completed by the experimental group counselors the final day of the program. Each question is listed below with the significant findings and comments included.

- (1) Do you feel, after completing the six-week program, that it would be beneficial to other counselors?

Yes - 100%

Why - "Up dating and exposure to vocational opportunities, etc.
Strengthens a weak point in counseling background
Insight into the world of work and research
Experience actually doing the job"

- (2) Do you believe your counseling students will be affected because of the special summer program?

Yes - 100%

Why - "Increased awareness of the world of work
Insight into qualities needed for success
Knowledge of the changing job market
Completely new attitude toward JPL and jobs there"

- (3) On the average, what length of time do you feel is sufficient to learn about a person's job? (Observing, discussion, and participation)

Average answer - a full day

- (4) For future programs, do you feel the daily work hours in some areas should be different? To what degree?

Yes - 95% No - 5%

Why - "Too much time in one area
The schedule should be flexible"

- (5) How were (or were not) the suggested objectives met for you as a participant in the program?

(a) To provide several new career profiles. Yes - 100%

(b) To provide an experience of career exposure through:

Observation	Yes - 100%	
Inquiry	Yes - 100%	
Participation	Yes - 80%	No - 20%

(c) To witness or learn the success and failures an employee experiences on his job. Yes - 100%

(6) Please rate the value of the areas where you participated:

<u>Area</u>	Low		Medium		High
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Public Affairs					X
Employment-Personnel			X		
Mat. Logistics				X	
Carpenter, etc.					X
Graphic Arts, etc.				X	
Environmental Sc.			X		
Tracking Support			X		

(7) Please comment as to that area's contribution toward your new understanding of vocational needs.

Best Comments: "Every area was valuable for better understanding of vocational needs....all areas were fascinating and enlightening....the value was my exposure to new job opportunities and vocational needs....my understanding of vocational needs in all areas was greatly enhanced even though I was not able to actively participate in all areas.... I learned training and experience prerequisites as well as the good points of the trade areas and the evidence of team work in these areas"

(8) Suggestions

"Allow some time between jobs for debriefing and reflecting....All counselors should experience All areas.... orientation should stress program objectives....no more than three days in one area....four week program instead of six weeks....films should start earlier....survey participants in advance....demand more individual effort from counselors....tour the laboratories....Friday afternoon sessions were too long....more time for counselors to compare notes....avoid dead time....written schedule for each area with the particular jobs to be covered would be helpful....flexibility so an individual can go to an area not in his schedule or re-visit an area for more information"

The Project Evaluator attended several of the Friday afternoon sessions held with all counselors working at JPL. The Project Evaluator also interviewed several counselors individually and he reviewed the 28 minute video tape of the highlights of three Friday p.m. sessions. Based upon these contacts the following statements are advanced:

- (1) General reaction to the program was positive. Counselors would recommend the program to their colleagues.
- (2) Counselors seemed to have a good understanding of how they might apply new knowledge obtained in their on-the-job work with students. The video tape illustrated this point well in a segment in which a counselor pointed out a specific example of expected usage with students in a subject area (English and technical writing).
- (3) Most counselors felt the program met their expectations. They also felt they were able to participate as well as observe.
- (4) Exposure to job opportunities for persons without a bachelor's or higher degree was noted. Many counselors were impressed by the number and type of jobs available to persons without four years of college.
- (5) A greater appreciation for skills involved in trade and technical level occupations was noted.
- (6) One source of dissatisfaction was the variation in the value of the program from week to week. Certain departments or work areas seemed to offer more than others.
- (7) The Friday afternoon sessions produced mixed feelings regarding their worth.

- (8) The PCC counselors appeared to have somewhat different views of the program as compared with the high school counselors who participated for the six weeks. Overall reaction of the PCC counselors was on the positive side but several questioned the amount of time devoted to certain areas. Perhaps, the more specialized background of the community college counselors and the fact that they only participated for five days each may have provided an opportunity for disillusionment.

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

SUMMARY

A group of ten high school counselors spent six weeks at JPL during which time they were exposed to a variety of vocations and work situations. Six community college counselors participated in the same program but on a one week basis. Participating counselors completed pre and post tests designed to measure knowledge of JPL and various vocations as well as attitudes toward certain educational/vocational areas. In addition, counselors were matched with other counselors who did not participate but who did complete the same tests. Reactions of participating counselors also were determined by means of a written questionnaire, interviews, and group sessions.

CONCLUSIONS

Results on the test designed to measure basic knowledge obtained showed that while participating counselors improved test performance, this improvement was not statistically significant. Initial ratings on the test to measure attitudes generally were positive toward all concepts. Exposure to the program did little to change these already positive attitudes. Counselor reaction to the program as determined by written questionnaire, individual interviews, and summarization of the group sessions were supportive of the program. Most counselors felt the program met their needs and expectations and that they would recommend it to fellow counselors. They also were able to provide

specific examples of knowledge gained about certain vocations and how they would utilize this information in their work with students. The extent of carry-over will be determined by a questionnaire that participating counselors will complete during the 1971-72 fall semester.

As a by-product of the program the counselors produced a guidance presentation (audio tape and slide) covering numerous job responsibilities and requirements. This presentation will be available for use with students in the local high schools.

RECOMMENDATIONS

The following recommendations are advanced:

- (1) A program of this type should be considered "pilot" in nature. Thus, data (subjective and objective) were positive enough to warrant another effort.
- (2) Attempts should be continued to develop instruments related to assessing change in performance and behavior of participants.
- (3) Future programs should try to individualize the activities. The training and experience of counselors varies and in order to be most effective, the program should be geared to each person's needs. The scheduling of all possible areas of job coverage and experiences available and then allowing each counselor to select his own program may be more beneficial.
- (4) Perhaps, a variety of programs should be offered. One similar to this, providing a comprehensive coverage of

basic vocational areas. Another designed to offer a short term coverage of several job areas with little opportunity for participation.

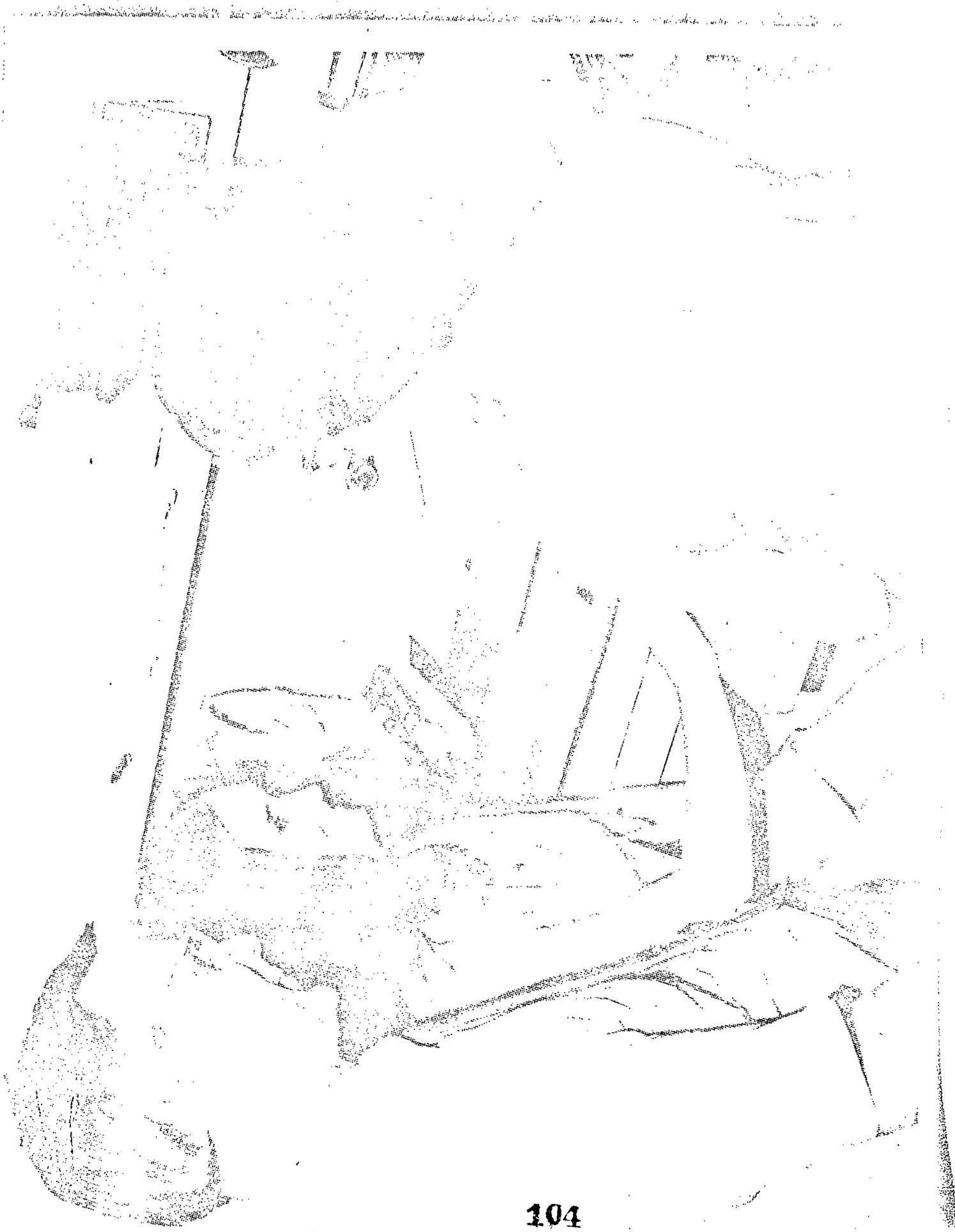
- (5) In some cases, counselors felt that they may have been distracting supervisors and others from their regular duties. Would it be feasible for a person from a department with overall responsibility to provide initial orientation in each job area?
- (6) Efforts should be continued to provide a comprehensive orientation regarding program components as well as the objectives of the program.
- (7) Attempts should be made to strengthen pre-planning efforts. The early selection of participants as well as obtaining the full cooperation of agency supervisors and others would facilitate total program planning.

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APPENDICES

- A. - EDPA Evaluation Test, Part I
- B. - EDPA Evaluation Test, Part II
- C. - JPL Questionnaire
- D. - Mean Scores on EDPA Evaluation Test, Part I
- E. - Mean Scores on EDPA Evaluation Test, Part II
(PCC Counselors)

La Canada - JPL
 Career Guidance Training Program
 EPDA Evaluation Test

The following tests have been designed to gather information basic to the Career Guidance Training Program. Please read each test item carefully and respond. If you are unsure about your answer, select the response that "seems" most appropriate. It is not anticipated that participants will be able to answer all items correctly.

Part I.

Responses to Part I. should be indicated on the attached answer sheet. Please note that True-False responses are under (1) True and (2) False

1. The total number of employees at JPL is -
 (1) less than 500 (2) 500 - 1500 (3) 1500 - 2500
 (4) 2500 - 3500 (5) more than 3500
2. The ratio of support personnel to scientists/engineers at JPL is -
 (1) less than 2 to 1 (2) about 2 to 1 (3) more than 2 to 1
3. Because of the unique nature of the organization, employees of JPL are not eligible for Social Security benefits. (1) True (2) False
4. All positions at JPL require a high school diploma or equivalent.
 (1) True (2) False
5. In addition to being an equal opportunity employer, JPL has an action program in this area. (1) True (2) False
6. All JPL personnel must have a security clearance. (1) True (2) False
7. As part of its personnel services program, JPL encourages the continued education of its employees through a program of tuition support. (1) True (2) False
8. All new employees of JPL are considered to be on a probationary or trial basis during their initial period of employment. (1) True (2) False
9. Approximately two-thirds of all JPL employees can be classified as engineers or scientists. (1) True (2) False
10. Because of the specialized nature of the work at JPL, the number of office and clerical personnel is slight (below ten per cent of the total work force). (1) True (2) False
11. Positions at JPL have a minimum and maximum entry salary range. Placement is determined on the basis of education and experience. (1) True (2) False

Below are four levels of education/training.

- (1) high school graduate or equivalent (2) two years of college or technical training
 (3) four year college program (4) graduate degree program

For each of the following occupations at JPL, select the usual minimum educational/training level required for entry -

- | | | |
|-----------------------|---------------------------------|---------------------------|
| 12. Accounting Clerk | 17. Art Specialist | 21. Literature Searcher |
| 13. Illustrator | 18. Auto Maintenance Man | 22. Carpenter |
| 14. Junior Accountant | 19. Junior Photo Lab Technician | 23. Aeronautical Engineer |
| 15. Clerk, Chief Mail | 20. Assistant Editor | 24. Electrician |
| 16. Librarian | | 25. Design Draftsman |
| | | 26. Engineering Aide |

Three occupations are listed below:

- (1) Editor (2) Editorial Assistant (3) Proofreader

For each description of duty or requirement indicated - select the most appropriate occupation.

27. One year of college required with emphasis on English or Journalism.
 28. Provides assistance in the preparation of reports, manuals, etc.
 29. Two years of college required with emphasis on English, Math, Engineering, and the physical sciences.
 30. Rewrites, revises, or rewords Technical Translations

Susan is completing her senior year in high school. Her grades in most general subjects have been C's and B's. She displays an interest in working with numbers and in clerical/detail work. Typing ability is not strong. Plans for further education are not definite and she plans to seek employment after graduation. Several JPL occupations are listed below. If the occupation is a realistic possibility indicate YES (1), if not, NO (2).

31. Cashier -
 32. Secretary -
 33. Reservations Clerk -
 34. Accounting Clerk -
 35. General Clerk -
 36. Department Clerk -

Four occupations are listed below:

- (1) Draftsman "A" (2) Designer (3) Draftsman, Engineering (4) Illustrator

For each description of duties indicated, select the most appropriate occupation.

37. Prepares paste-ups of publications and arranges material in proper form for the particular type of publication.
 38. Prepares detailed drawing or sketches of component parts, sub-assemblies, and tool or construction details, materials, and specifications for buildings.

39. Prepares experimental devices for electrical, mechanical, and hydraulic systems and subsystems from rough sketches, notes, or verbal instructions.
40. Develops simple layouts and complex details of major engineering drawings from sketches, notes, or verbal instructions.

Match the following occupations with the correct description of duties

41. Technical Aide A -
42. Electronic Technician -
43. Technician, Senior Model -
44. Technician, Junior Laboratory -
45. Electronic Specialist -
 - (1) Performs duties associated with wind tunnel model installation and calibration, and instrument and tunnel equipment fabrication.
 - (2) Provides technical support to engineers in the fabrication of complex electronic hardware.
 - (3) Provides routine and special analytical support for propellant and other technical projects.
 - (4) Performs all necessary functions involved in layout, fabrication, assembly, checkout, and operation of complex, high density electronic equipment.
 - (5) Assists engineering personnel in the handling, processing and accumulation of experimental data.

La Canada - JPL
 Career Guidance Training Program
 EPDA Evaluation Test

Part II

Words often have different meaning as interpreted by various persons. The following are several topics, each with a set of opposite adjectives. You are to rate the topics on each of the adjectives. Rate on the basis of what it means to you.

For example, if what you are judging is very close to one end of the scale then you indicate this as follows - Example

MY DOG

UGLY _____ : _____ : _____ : _____ : _____ : _____ : X BEAUTIFUL

If it is closer to one end of the scale than the other, then rate it like this -

MY DOG

UGLY _____ : _____ : _____ : _____ : _____ : X : _____ BEAUTIFUL

OR - if not that close then -

UGLY _____ : _____ : _____ : X : X : _____ : _____ BEAUTIFUL

If the scale has nothing to do with what you are judging or if your judgment is neutral, then rate as follows -

MY DOG

UGLY _____ : _____ : _____ : X : _____ : _____ : _____ BEAUTIFUL

Please complete each scale under each topic. Place your mark in the center of the space. Do not spend too much time on any item and be sure to judge each item separately.

Name _____

Date _____

Words often have different meaning as interpreted by various persons. The following are several topics. Each followed with a set of opposite adjectives. You are to rate the topics on each of the adjectives. Rate on the basis of what it means to you.

PROFESSIONAL LEVEL OCCUPATIONS

WEAK _____ : _____ : _____ : _____ : _____ : _____ : _____ STRONG

INTERESTING _____ : _____ : _____ : _____ : _____ : _____ : _____ UNINTERESTING

GOOD _____ : _____ : _____ : _____ : _____ : _____ : _____ BAD

UNIMPORTANT _____ : _____ : _____ : _____ : _____ : _____ : _____ IMPORTANT

CLEAN _____ : _____ : _____ : _____ : _____ : _____ : _____ DIRTY

SUCCESSFUL _____ : _____ : _____ : _____ : _____ : _____ : _____ UNSUCCESSFUL

POSITIVE _____ : _____ : _____ : _____ : _____ : _____ : _____ NEGATIVE

FOOLISH _____ : _____ : _____ : _____ : _____ : _____ : _____ WISE

TRUE _____ : _____ : _____ : _____ : _____ : _____ : _____ FALSE

CRUEL _____ : _____ : _____ : _____ : _____ : _____ : _____ KIND

Name _____

Date _____

Words often have different meaning as interpreted by various persons. The following are several topics. Each followed with a set of opposite adjectives. You are to rate the topics on each of the adjectives. Rate on the basis of what it means to you.

OCCUPATIONAL POSSIBILITIES AT JPL

WEAK _____ : _____ : _____ : _____ : _____ : _____ : _____ STRONG

INTERESTING _____ : _____ : _____ : _____ : _____ : _____ : _____ UNINTERESTING

GOOD _____ : _____ : _____ : _____ : _____ : _____ : _____ BAD

UNIMPORTANT _____ : _____ : _____ : _____ : _____ : _____ : _____ IMPORTANT

CLEAN _____ : _____ : _____ : _____ : _____ : _____ : _____ DIRTY

SUCCESSFUL _____ : _____ : _____ : _____ : _____ : _____ : _____ UNSUCCESSFUL

POSITIVE _____ : _____ : _____ : _____ : _____ : _____ : _____ NEGATIVE

FOOLISH _____ : _____ : _____ : _____ : _____ : _____ : _____ WISE

TRUE _____ : _____ : _____ : _____ : _____ : _____ : _____ FALSE

CRUEL _____ : _____ : _____ : _____ : _____ : _____ : _____ KIND

Name _____

Date _____

Words often have different meaning as interpreted by various persons. The following are several topics. Each followed with a set of opposite adjectives. You are to rate the topics on each of the adjectives. Rate on the basis of what it means to you.

COMPLETION OF A FOUR-YEAR COLLEGE EDUCATION

WEAK _____ : _____ : _____ : _____ : _____ : _____ : _____ : _____ STRONG

INTERESTING _____ : _____ : _____ : _____ : _____ : _____ : _____ : _____ UNINTERESTING

GOOD _____ : _____ : _____ : _____ : _____ : _____ : _____ : _____ BAD

UNIMPORTANT _____ : _____ : _____ : _____ : _____ : _____ : _____ : _____ IMPORTANT

CLEAN _____ : _____ : _____ : _____ : _____ : _____ : _____ : _____ DIRTY

SUCCESSFUL _____ : _____ : _____ : _____ : _____ : _____ : _____ : _____ UNSUCCESSFUL

POSITIVE _____ : _____ : _____ : _____ : _____ : _____ : _____ : _____ NEGATIVE

FOOLISH _____ : _____ : _____ : _____ : _____ : _____ : _____ : _____ WISE

TRUE _____ : _____ : _____ : _____ : _____ : _____ : _____ : _____ FALSE

CRUEL _____ : _____ : _____ : _____ : _____ : _____ : _____ : _____ KIND

..

Name _____

Date _____

Words often have different meaning as interpreted by various persons. The following are several topics. Each followed with a set of opposite adjectives. You are to rate the topics on each of the adjectives. Rate on the basis of what it means to you.

TRADE LEVEL OCCUPATIONS

WEAK _____ : _____ : _____ : _____ : _____ : _____ : _____ STRONG

INTERESTING _____ : _____ : _____ : _____ : _____ : _____ : _____ UNINTERESTING

GOOD _____ : _____ : _____ : _____ : _____ : _____ : _____ BAD

UNIMPORTANT _____ : _____ : _____ : _____ : _____ : _____ : _____ IMPORTANT

CLEAN _____ : _____ : _____ : _____ : _____ : _____ : _____ DIRTY

SUCCESSFUL _____ : _____ : _____ : _____ : _____ : _____ : _____ UNSUCCESSFUL

POSITIVE _____ : _____ : _____ : _____ : _____ : _____ : _____ NEGATIVE

FOOLISH _____ : _____ : _____ : _____ : _____ : _____ : _____ WISE

TRUE _____ : _____ : _____ : _____ : _____ : _____ : _____ FALSE

CRUEL _____ : _____ : _____ : _____ : _____ : _____ : _____ KIND

Name _____

Date _____

Words often have different meaning as interpreted by various persons. The following are several topics. Each followed with a set of opposite adjectives. You are to rate the topics on each of the adjectives. Rate on the basis of what it means to you.

TECHNICAL LEVEL OCCUPATIONS

WEAK _____ : _____ : _____ : _____ : _____ : _____ : _____ STRONG

INTERESTING _____ : _____ : _____ : _____ : _____ : _____ : _____ UNINTERESTING

GOOD _____ : _____ : _____ : _____ : _____ : _____ : _____ BAD

UNIMPORTANT _____ : _____ : _____ : _____ : _____ : _____ : _____ IMPORTANT

CLEAN _____ : _____ : _____ : _____ : _____ : _____ : _____ DIRTY

SUCCESSFUL _____ : _____ : _____ : _____ : _____ : _____ : _____ UNSUCCESSFUL

POSITIVE _____ : _____ : _____ : _____ : _____ : _____ : _____ NEGATIVE

FOOLISH _____ : _____ : _____ : _____ : _____ : _____ : _____ WISE

TRUE _____ : _____ : _____ : _____ : _____ : _____ : _____ FALSE

CRUEL _____ : _____ : _____ : _____ : _____ : _____ : _____ KIND

Name _____

Date _____

Words often have different meaning as interpreted by various persons. The following are several topics. Each followed with a set of opposite adjectives. You are to rate the topics on each of the adjectives. Rate on the basis of what it means to you.

COMPLETION OF A HIGH SCHOOL EDUCATION

WEAK _____ : _____ : _____ : _____ : _____ : _____ : _____ STRONG

INTERESTING _____ : _____ : _____ : _____ : _____ : _____ : _____ UNINTERESTING

GOOD _____ : _____ : _____ : _____ : _____ : _____ : _____ BAD

UNIMPORTANT _____ : _____ : _____ : _____ : _____ : _____ : _____ IMPORTANT

CLEAN _____ : _____ : _____ : _____ : _____ : _____ : _____ DIRTY

SUCCESSFUL _____ : _____ : _____ : _____ : _____ : _____ : _____ UNSUCCESSFUL

POSITIVE _____ : _____ : _____ : _____ : _____ : _____ : _____ NEGATIVE

FOOLISH _____ : _____ : _____ : _____ : _____ : _____ : _____ WISE

TRUE _____ : _____ : _____ : _____ : _____ : _____ : _____ FALSE

CRUEL _____ : _____ : _____ : _____ : _____ : _____ : _____ KIND

col
 SUMMER VISITING COUNSELOR PROGRAM AT JPL QUESTIONNAIRE SURVEY

1. Do you feel, after completing the six-week program, that it would be beneficial to other counselors?

Yes _____

No _____

Why _____

2. Do you believe your counseling students will be affected because of the special summer program?

Yes _____

No _____

Why _____

3. On the average, what length of time do you feel is sufficient to learn about a person's job? (observing, discussion and participation)

4. For future programs, do you feel the daily work hours in some areas should be different? To what degree?

Yes _____

No _____

Why _____

5. How were (or were not) the suggested objectives met for you as a participant in the program?

a) To provide several new career profiles. YES _____ NO _____

b) To provide an experience of career exposure through:

observation YES _____ NO _____

inquiry YES _____ NO _____

participation YES _____ NO _____

-2-

- c) To witness or learn the success and failures an employee experiences on his job. YES _____ NO _____

6. Please rate the value of the areas where you participated:

1st Week	1	2	3	4	5 (high)	Area _____	Job _____
2nd Week	1	2	3	4	5 (high)	Area _____	Job _____
3rd Week	1	2	3	4	5 (high)	Area _____	Job _____
4th Week	1	2	3	4	5 (high)	Area _____	Job _____
5th Week	1	2	3	4	5 (high)	Area _____	Job _____
6th Week	1	2	3	4	5 (high)	Area _____	Job _____

7. Please comment as to that area's contribution toward your new understanding of vocational needs.

8. Suggestions

APPENDIX D

EDPA EVALUATION TEST, PART II

PROFESSIONAL LEVEL OCCUPATIONS

ADJECTIVE PAIRS	GROUP MEAN SCORES			
	Exger. T ₁	Exger. T ₂	Control T ₁	Control T ₂
1.	6.5	5.0	6.0	6.4
2.	1.3	1.7	1.1	2.1
3.	2.0	1.9	1.8	2.0
4.	6.0	6.5	6.5	6.7
5.	2.0	2.1	2.2	2.5
6.	2.0	2.1	1.2	2.6
7.	2.4	2.0	1.6	2.2
8.	5.8	6.6	6.4	5.3
9.	3.0	2.7	2.4	3.5
10.	5.0	4.9	4.7	4.6

OCCUPATIONAL POSSIBILITIES AT JPL

ADJECTIVE PAIRS	GROUP MEAN SCORES			
	Exger. T ₁	Exger. T ₂	Control T ₁	Control T ₂
1.	5.3	5.9	5.7	5.5
2.	1.8	1.3	1.5	1.6
3.	2.3	1.9	2.1	1.9
4.	6.1	6.1	6.2	6.5
5.	2.5	3.2	2.4	2.3
6.	2.2	2.2	1.5	2.0
7.	2.1	2.2	1.7	1.9
8.	5.4	5.3	6.0	5.6
9.	3.5	2.7	2.0	2.8
10.	5.0	5.3	4.8	4.5

COMPLETION OF A FOUR-YEAR COLLEGE EDUCATION

ADJECTIVE PAIRS	GROUP MEAN SCORES			
	Exper. T ₁	Exper. T ₂	Control T ₁	Control T ₂
1.	5.6	5.3	6.1	5.5
2.	2.2	2.3	1.7	1.9
3.	2.0	1.9	1.7	1.5
4.	5.5	5.6	6.0	6.2
5.	2.8	3.1	3.0	3.0
6.	2.6	2.8	1.7	2.2
7.	2.3	2.6	1.8	1.7
8.	5.7	2.4	6.3	5.7
9.	3.3	2.8	3.1	2.7
10.	4.7	4.9	4.5	4.6

TRADE LEVEL OCCUPATIONS

ADJECTIVE PAIRS	GROUP MEAN SCORES			
	Exper. T ₁	Exper. T ₂	Control T ₁	Control T ₂
1.	5.6	5.5	6.3	6.0
2.	2.6	2.3	1.9	2.5
3.	2.4	2.0	1.9	1.9
4.	5.9	6.2	6.5	6.5
5.	4.8	4.3	4.2	4.2
6.	2.6	2.4	2.0	2.1
7.	2.7	2.3	1.9	2.2
8.	4.9	5.3	5.4	5.4
9.	3.6	3.0	2.6	3.0
10.	4.5	4.7	4.6	4.8

TECHNICAL LEVEL OCCUPATIONS

ADJECTIVE PAIRS	GROUP MEAN SCORES			
	Exper T ₁	Exper T ₂	Control T ₁	Control T ₂
1.	5.9	5.8	6.3	6.1
2.	2.0	1.7	2.3	2.1
3.	2.3	1.7	1.6	1.5
4.	6.1	6.6	5.7	6.2
5.	3.1	2.8	2.8	3.1
6.	2.5	2.4	2.3	1.8
7.	2.6	1.9	2.1	2.0
8.	5.1	5.4	5.5	5.8
9.	3.6	2.8	2.6	3.1
10.	4.5	4.5	4.6	4.8

COMPLETION OF A HIGH SCHOOL EDUCATION

ADJECTIVE PAIRS	GROUP MEAN SCORES			
	Exper. T ₁	Exper. T ₂	Control T ₁	Control T ₂
1.	6.5	6.4	6.1	6.6
2.	2.1	2.7	2.1	2.0
3.	1.5	1.6	1.7	1.3
4.	6.5	6.4	5.3	6.7
5.	2.8	3.3	3.7	3.0
6.	2.1	2.0	2.7	2.2
7.	1.8	2.0	2.5	1.1
8.	6.1	6.5	5.7	6.2
9.	3.3	2.7	2.5	3.0
10.	5.1	4.6	4.3	4.5

APPENDIX E
EDPA EVALUATION TEST, PART II
(PCC COUNSELORS)

PROFESSIONAL LEVEL OCCUPATIONS

ADJECTIVE PAIRS	MEAN SCORES	
	PCC Exper. T ₁	PCC Exper. T ₂
1.	5.8	6.4
2.	1.2	2.0
3.	1.4	1.8
4.	6.6	6.6
5.	1.8	1.6
6.	1.4	2.2
7.	1.4	2.0
8.	6.6	5.3
9.	3.0	3.8
10.	4.8	5.2

OCCUPATIONAL POSSIBILITIES AT JPL

ADJECTIVE PAIRS	MEAN SCORES	
	PCC Exper. T ₁	PCC Exper. T ₂
1.	6.2	5.8
2.	2.0	1.8
3.	1.8	2.5
4.	5.6	5.6
5.	2.4	2.6
6.	2.2	2.6
7.	1.8	2.6
8.	5.2	5.6
9.	3.0	3.6
10.	5.0	4.4

COMPLETION OF A FOUR-YEAR COLLEGE EDUCATION

ADJECTIVE PAIRS	MEAN SCORES	
	PCC Exper. T_1	PCC Exper. T_2
1.	6.2	5.6
2.	2.4	3.0
3.	1.8	3.2
4.	6.2	6.0
5.	2.6	2.8
6.	2.2	3.0
7.	1.8	2.0
8.	6.0	5.4
9.	3.0	3.6
10.	4.6	4.0

TRADE LEVEL OCCUPATIONS

ADJECTIVE PAIRS	MEAN SCORES	
	PCC Exper. T_1	PCC Exper. T_2
1.	6.0	5.8
2.	2.2	3.0
3.	2.4	3.0
4.	6.2	6.0
5.	4.6	4.0
6.	2.0	2.8
7.	2.2	2.6
8.	5.2	5.2
9.	3.6	3.6
10.	4.4	4.0

TECHNICAL LEVEL OCCUPATIONS

ADJECTIVE PAIRS	MEAN SCORES	
	PCC Exper. T ₁	PCC Exper. T ₂
1.	6.0	5.8
2.	2.2	2.2
3.	2.0	2.2
4.	6.2	6.2
5.	2.6	3.0
6.	2.2	2.6
7.	2.2	2.2
8.	5.2	5.2
9.	3.4	3.4
10.	4.4	4.0

COMPLETION OF A HIGH SCHOOL EDUCATION

ADJECTIVE PAIRS	MEAN SCORES	
	PCC Exper. T ₁	PCC Exper. T ₂
1.	6.4	6.6
2.	2.6	3.8
3.	1.8	1.6
4.	6.6	6.8
5.	3.2	3.6
6.	2.0	2.4
7.	1.8	2.4
8.	5.8	6.2
9.	3.2	3.4
10.	5.0	4.0

APPENDICES

- A. - EDPA Evaluation Test, Part I
- B. - EDPA Evaluation Test, Part II
- C. - JPL Questionnaire
- D. - Mean Scores on EDPA Evaluation Test, Part I
- E. - Mean Scores on EDPA Evaluation Test, Part II
(PCC Counselors)
- F. - Participant Questionnaire (Part of Follow-up)

B. Please describe specific incidents or examples of how your experiences at JPL have had an effect on your counseling with students.

C. In looking back over your experiences in the program, what suggestions for program improvement would you make?
