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A Measurement Study Of Attitudinal Interactions Of Selected Vocational School Teachers And Students Concerning Attendance And Grades With Implications For Administrator Training

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This dissertation, directed and approved by the candidate's committee, has been accepted by the Graduate Committee of The University of New Mexico in partial fulfillment of the requirements for the degree of

DOCTOR OF EDUCATION

Title A MEASUREMENT STUDY OF ATTITUDINAL INTERACTIONS OF SELECTED VOCATIONAL SCHOOL TEACHERS AND STUDENTS CONCERNING ATTENDANCE AND GRADES WITH IMPLICATIONS FOR ADMINISTRATOR TRAINING

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DISSERTATION

Submitted in Partial Fulfillment of the
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AUGUST, 1971

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This study was designed to measure attitudinal interactions of selected vocational school teachers and students concerning grades and attendance, school policy problems, at a Technical Vocational Institute. This was done in an attempt to determine whether students and teachers viewed themselves and existing attendance and grading policy as constants or variables. It was assumed that those receiving scores indicating they considered themselves constants would be more likely to support the existing policy while those receiving scores indicating they considered themselves variables would be more likely to desire a policy change.

Teachers and student attitudinal interactions were measured and plotted on a graph to represent a synthesis of teacher and student attitudes as measured by the Kerlinger-Kaya Progressive Traditional Educational Scale. The graph and the Kerlinger-Kaya Educational Scale are integral parts of the Educational Attitudinal Synthetic Plane Placement Instrument, developed by Felix Garcia Jr. and John P. Grillo, which was used for this study.

Seventy students and fifteen teachers participated in the study, and all student testing was done in the classrooms of the Technical Vocational Institute within one week. The students represented two disciplines, Data Processing and Machine Trades. Data was handled through

a computer program developed by John P. Grillo, a co-developer of the EASPP. This program synthesizes student and teacher attitudinal interaction scores into one graph plot for interpretative purposes.

It was found that the majority of teachers and students held progressive subscale scores as measured by the Kerlinger-Kaya Educational Scale. Moreover, when students selected teachers and teachers selected students to match established problems on the opinionnaire, the combination of scores was predominately progressive. These reactions seemed to indicate the majority of respondents have indicated their propensity to change the Technical Vocational Institute policy for grades and attendance with grades being considered more a variable than attendance was considered a variable.

The Data Processing II and V groups were found to be the most reactionary and variable, and Machine Trades III was the least variable. When students chose teachers to match the established problems, it was found that teachers contributed more progressive attitudinal intensity for changing grades than was exhibited by the selecting students.

This instrument could be used to identify potential partners in the change process if administrators are interested in including staff or students in policy change. School personnel, collegiate educators and State Departments

of Education leaders could employ this instrument with different problems to measure attitudinal interactions related to policy change.

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CHAPTER I

THE PROBLEM AND DEFINITIONS OF TERMS USED

One of the most volatile issues in contemporary education is the change process in the public schools. This problem is compounded by the fact that there seems to be no universal policy by which change agents can be clearly identified. Who should exercise power for the purpose of changing the schools? Should administrators, staffs or students be given the opportunity to direct innovations? Which group in fact has power enough to influence the others?

Some administrators and teachers have long held the belief that change should be administered by them. Today, however, many students desire a chance to participate in changes which directly affect them.

Numerous recent studies have indicated an increasing dissatisfaction among students at the secondary and post secondary level with the educational system that is preparing them for their eventual role in society. Students have indicated that they want to be more involved regarding curriculum planning, grades, attendance policies, dress codes and discipline; but they are not seeking sole authority to run the schools.

R. H. Goettler and Associates Inc., in cooperation with the State of Ohio Buckeye Association of School

Administrators and Kent State University, recently finished a state wide survey of secondary schools. These results indicate the students' desire to be involved in school matters:

> 90 percent feel they should take part in curriculum planning,
>
> 72 percent believe discipline should be handled cooperatively by students, faculty, and administration,
>
> 54 percent think student power and student activism can help to get better education.[1]

These survey results seem to indicate genuine interest of today's students about their educational training. Can today's youth be influential enough to alter the seemingly traditional education structure? Can teachers working within that structure influence changes? Do teachers and students perceive themselves as constants, thus not capable of influencing change in educational organizations, or do teachers and students perceive themselves as variables, thus capable of influencing educational change?

Assuming change is possible, how would the administrator become aware of faculty and student attitudes? Does the current administrator have adequate leadership training to accommodate desired change?

I. THE PROBLEM

Statement of the problem. This study will attempt to investigate the following questions:

Do selected teachers at a Technical Vocational-Institute perceive existing school policy regarding grades and attendance as constants, therefore, not amenable to change, or do these teachers perceive existing school policy regarding grades and attendance as variables, therefore capable of being changed?

Do selected teachers at the Technical Vocational-Institute see themselves as constants, therefore, not capable of influencing change in existing attendance and grading policy, or do these teachers perceive themselves as variables and capable of influencing change in existing attendance and grading policies?

Do selected students at a Technical Vocational-Institute perceive existing school policy regarding grades and attendance as constants, therefore, not amenable to change, or do these students perceive existing school policy regarding grades and attendance as variables, therefore capable of being changed?

Do selected students at the Technical Vocational-Institute see themselves as constants, therefore, not capable of influencing change in existing attendance and grading policy, or do these students perceive themselves as variables and capable of influencing change in existing attendance and grading policies?

Do the combined scores of teachers and students indicate that together they perceive themselves as constants, and therefore, not capable of influencing change in existing attendance and grading policies at the Technical Vocational-Institute or do their combined scores indicate that together they perceive themselves as variables and capable of influencing change?

Purpose of the study. This study attempts to identify whether teachers and students at the Technical Vocational-Institute perceive themselves as change agents capable of influencing change in the T V-I attendance and grading policy. If teachers see themselves as constants, it is presumed that they would support the policy concerning grades and attendance. Conversely, if

students perceive themselves as variables, it is assumed they will exhibit influences for a degree of change concerning the T V-I attendance and grading policy.

In a broader sense this study will field test a tool whereby future change agents should be able to identify potential partners in the change process. Superintendents, curriculum directors, and principals can use the instrument to identify personnel who might help or hinder change.

II. DEFINITIONS OF TERMS USED

Constant. Webster defines constant as, ". . . something that does not vary or change in its relationship or in an essential relationship with other things."[2] Moreover, in this study, a constant will be defined as that relationship in which both participants of an interaction are measured as noncommittal. Such a noncommittal interaction would produce no change in either the relationship measured or the environment pertinent to that interaction.

Variable. Good states that a variable is, ". . . any trait that changes from one case or condition to another; more strictly the representation of the trait, usually in quantitative form, such as measurement or enumeration."[3]

School policy. That policy by which students and teachers must abide at the Technical Vocational-Institute.

This study deals with two aspects of this policy, attendance and grades.

Degree of change. Any input in the form of a variable which may visibly alter a closed system can be labeled degree of change. The change in the system which seems required from the analysis of the data from the study will also be called degree of change. The instrument used in this study will ascertain the degree of change needed when comparing teachers and students with the T V-I school policy.

Attendance. The 1970-71 T-VI Bulletin[4] (pg. 10) states,

> Each person admitted to T-VI pledges to attend all class sessions of every course as a condition of his or her admission. Attendance is taken each class period of each day, and reported to the Attendance Office. The student's attendance record becomes part of his or her permanent transcript at the Institute.

Grades. Teachers are required to judge student progress with grades on a five point scale, A - F. These grades are recorded on the student's transcripts and become part of their permanent record at T-VI. Page 5 of the T-VI Student Bulletin states,[5]

> Employers who ask for a copy of your transcript will be able to judge whether or not you were on time and a regular attendee, as well as what kind of grades you made.

III. DELIMITATIONS OF THE STUDY

This study is limited to a specific vocational school group, the Albuquerque Technical Vocational-Institute students. A description of this school is included in Chapter III.

This study is concerned only with the attitudes of seventy students in data processing and machine trades and fifteen instructors from T V-I.

Only two problems of T V-I policy, attendance and grades, will be included in this study.

Only students in second and third trimester data processing and machine trades from T V-I are polled. This limitation is imposed because students are not exposed to the heart of their training or discipline until the latter two or three trimesters of their assigned programs.

The review of the literature will include those citations dealing with the description of factual, listed administrative training programs and not with proposals or theoretical designs concerning leadership training.

IV. PROCEDURES OF THE STUDY

This study followed these steps:

1. Students in the machine trades and data processing fields completed the Kerlinger-Kaya Educational Scale. This scale measures progressive and traditional

attitudes toward education. This Scale consists of twenty statements using a seven point Likert scale selection.

2. Students were administered an opinionnaire containing two problems, attendance and grades. The students selected an instructor from an offered list to match each separate problem. These instructors teach classes in the major area of training but do not teach related education courses.

3. The teachers who are identified by the machine trades and data processing students were given the Kerlinger-Kaya Educational Scale and filled out the accompanying opinionnaire. Selected teachers were asked to choose a separate student to represent the two problems. Students were chosen from a class list which contained the student's name who chose the teacher.

4. Results of both student and teacher responses were transferred to IBM punch cards. These cards are processed through a program designed and field tested by Dr. John P. Grillo, a codeveloper of the Educational Synthetic Plane Placement Instrument which is also used in this study. The results of the processing are shown as numbers on a graph from the computer print out. These numbers represent a synthesis of teacher and student attitude toward education as measured by the Kerlinger-Kaya Progressive Traditional Educational Scale.

5. An analysis of the numbers, plots, on the graphs reveals whether students or teachers make more

contribution toward each problem separately, the extent to which both students and teachers contribute toward each problem, whether these problems are considered constants or variables, and whether teachers or students fit the definition of constants or variables. This analysis enables policy makers to determine any degree of change needed.

V. APPLICATIONS OF THE STUDY

Some possible uses of this study include:

1. School districts could employ this research procedure to measure attitudes of teachers toward policies which central office personnel consider important.

2. Colleges could use this approach to test attitudes of potential student teachers and sponsoring teachers for a closer placement of like minded people.

3. In a wider sense, state departments of education could gauge attitudes of superintendents toward policy changes of finance or issues relating to school developments.

4. Superintendents, principals, and curriculum directors could use this procedure to identify personnel willing to contribute to the change process in the public schools. This knowledge will enhance the change agent's ability to locate supportive personnel.

VI. AN EXPLANATION OF THE INSTRUMENTS

Dr. Felix Garcia's study, which was similar to this, was designed for the following reasons:

1. To develop an instrument, The Educational Attitudinal Synthetic Plane Placement.

2. This instrument was to synthesize progressive and traditional educational attitudes as recorded by instructors and students into one visible graph plot. This action was based on the rationale that in reality both traditional and progressive attitudes are functioning simultaneously within a person in relation to a particular situation.

3. This instrument combines the abstract and experiential reactions of teachers and students. Both groups react to the Kerlinger-Kaya Educational Scale (abstract) and students link teachers to specific problems extracted from the K-K (experiential).

4. With mathematical and computer program support from Dr. John Grillo, Garcia's rationale of capturing the student and teacher's reactions to a particular problem was translated to a plot on a graph, the visible representation of this synthesis. Analyzing the plot enabled Garcia to determine whether teachers or students contributed more to the selected problem. Knowing this would enable the designers to determine if students and teachers were constants or variables.

Grillo's algorithms can be described as follows:

1. Algorithm #1 was designed to gather the student's and teacher's median progressive and traditional scores.

2. Algorithm #2 a, b were to synthesize these scores into one score, an abstract number. Directionality and intensity were figured to give mobility to the score.

3. Algorithm #3 was designed for the X and Y coordinates for the mechanics of plotting.

The graph consists of octants. These octants are subsets of the total set, the graph. The main components are:

1. The horizontal line represents dichotomies of attitudes.

2. The vertical line represents similarities of attitudes.

3. The octants represent combinations, degrees, of attitudinal contribution offered by students and teachers.

4. Going from the mid point either way on the horizontal line represents degree of disparity; whereas, going up or down the vertical represents concurrence of attitude.

5. Leaving the horizontal and vertical lines and falling into octants represents directionality and intensity.

Figure I contains sample plots which are interpreted below:

Plot #1. This plot is on the line representing a total student contribution and a neutral contribution by the teacher on a selected theme. The student is the variable in this situation while the teacher remains a constant, that is, unchanged. If this were a measure of an attitude toward 18 year old voting, we could say the student is highly in favor while the teacher is not favorable.

Plot #2. This plot gives the opposite view of #1. Here the teacher makes all the contribution while the student remains constant.

Plot #3 gives a picture of concurrence whereby both parties are contributing, with an intensive progressive attitude, toward the theme.

Plot #4. This plot shows equal respondent contribution while representing disparate attitudes. The plot is on the line demonstrating equal intensity but opposite attitudes.

Viewing and interpreting these plots as suggested would support the thesis that a synthesis of attitudes exists and can be measured. Garcia further suggests that this synthesis can occur because of a numerical input which leads to analysis rather than the traditional analysis relying on a numerical output from a study and then

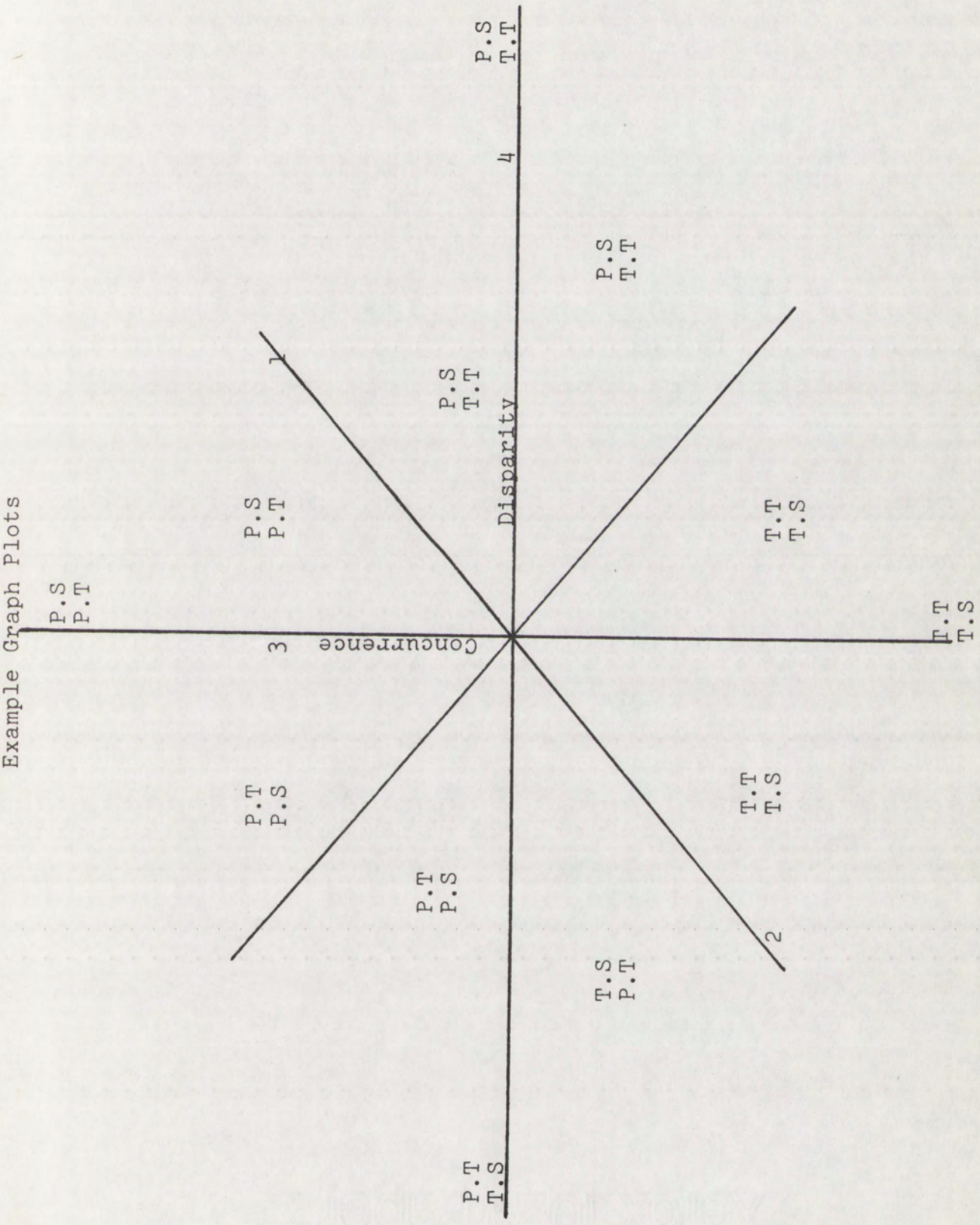

Figure I
Example Graph Plots

doing synthesis. From this analysis of the synthesis, hypotheses can be formed for further study, thereby completing the cyclical pattern.

For this study, the synthesis represents student and teacher attitudes toward the problems of attendance, and grades, rather than extracting problems from the Kerlinger-Kaya Traditional Progressive Educational Scale. Analyzing these plots shows how both groups react to the T V-I policy consisting of the mentioned components.

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CHAPTER II

REVIEW OF THE LITERATURE

This chapter presents a brief review of the established precedent for vocational training in the United States, the historical development of federal funding to support vocational education programs, the historical review and perspective of educational leadership and leadership training in vocational-technical education.

I. VOCATIONAL EDUCATION IN EARLY AMERICA

The historic precedent for vocational education in the United States is strongly established. Vocational education of an apprentice type was launched in early America by craftsmen from the old world. Artisans who specialized in woodworking, leathercraft and metals were in high demand, and their products were readily accepted by an eager and volatile population. Debts were paid to creditors through years of toil submitted by some indentured journeyman craftsmen.

America was in the developmental stage and needed workers who could provide the goods required for settlement, trade and expansion. However, training afforded the budding craftsman was provided on the job and usually offered low pay. The introduction of the factory system into American economics tended to drain any hope of

independence held by workers and made them more a slave than a craftsman.

The early 1800's witnessed the establishment of the Common Schools and mechanic institutes which stressed occupational mastery.[1] The first of the mechanics institutes organized in the United States was begun in New York City in 1820 by the General Society of Mechanics and Tradesmen. The thrust of this school was trade education which would provide improved social and economic conditions for the trainees.[2]

The Franklin Institute of Philadelphia, incorporated in 1824 for the purpose of extending a knowledge of mechanical science to its members, was another example of the early trade school movement.[3]

Another grass roots approach to educate the small town and country citizens in the 1830's was the lyceum,[4] a plan designed to provide education for the adult who lacked basic skills and knowledge of mechanics, hydraulics, and other farm related topics.

An example of the technical school emphasis of that era was the Rensselaer School established in Troy, New York, in 1824[5] in which instruction in domestic economy, the arts and manufacturing and agriculture was given to farmer's children.

The founders of the first high school in Boston in 1820 stated the purpose of the school should be to prepare youth for occupational life. This emphasis on

manual training was no doubt a carry over from the Continental-type education where heavy stress was laid on the ability to produce hand-craft items of use and duration.

A trend was established which remains current, for this early emphasis on training students for skill performance to provide goods while earning a living has not been reversed.

II. THE UNITED STATES GOVERNMENT AND VOCATIONAL EDUCATION

The government's involvement with vocational education began over 100 years ago. Early independent apprentice and training programs were usually on a relatively small scale and confined to specific trades, but when the federal dollars were available the picture changed.

Even though federal support was available, the thrust of this legislation and accompanying funding was for the establishment of specific programs to train future agronomists and technicians. An apparent weakness within these program developments was provision for leadership training of acting and potential vocational administrators. A quick survey of these listed enactments highlights this deficiency.

Acts from 1800 to 1900. The federal government, according to F. T. Struck, provided funds for state and national development for the following reasons:

1. Importance to national welfare,
2. Meeting emergency needs,
3. Help in equalizing opportunities,
4. Stimulation of state and local progress,
5. Fostering higher standards.[6]

R. Dugger stated the government needed visible impetus to grant funds for state programs.

> Repeatedly, in times of crisis, usually war, the federal government has concerned itself with the problem of meeting the needs of the land through vocational education.[7]

1. The first program underwritten by federal money for support of vocational education was the land-grant colleges. Congress had received petitions for financial aid from colleges as early as 1802,[8] for colleges wishing to receive land which they could sell to support their educational programs.

Parallel with the financial needs of colleges and universities was the need for better educated personnel in agriculture and engineering due to the Industrial Revolution. These needs were met by the passage of the Morrill Land-Grant Act of 1862.[9] Passage of the act, according to Venn, was initiated by a vaguely defined need to do something for the farmer who had practically been omitted from earlier national legislation.[10] A prime thrust of this bill was providing training for engineers for the war effort.

This act provided that public land should be granted to each state on a ratio of 30,000 acres for each senator and representative in Congress in 1862. The land sales revenue was usually pumped into one or two schools where agriculture, home economics and engineering were taught.

2. In 1887 the Hatch Act (Experimental Stations Act) was adopted which provided $15,000 in money for each state for establishing an agricultural experimental station. The act was designed to, ". . . aid in acquiring and diffusing among the people of the United States useful and practical information respecting the principle of application of agriculture and science."[11]

A second Morrill Act of 1890 provided an additional $15,000 annually for the support of land-grant colleges.[12]

Acts from 1900 to 1946.

1. The Smith-Lever (Agricultural Extension Act) of 1914 provided for a program of cooperative extension work in agriculture and home economics.[13] The emphasis of this act was to reach those non college persons who needed home instruction by traveling agents.

The results of a study done by the National Society for the Promotion of Industrial Education served as a basis for the passage of the Smith-Hughes Act of 1917.[14] The report related the increased needs of industry for trained workers and the shortage of such personnel available. Many potential workers could not afford to go

to college to receive training in mechanics and agriculture; therefore, some alternative plan (Smith-Hughes) had to be provided. This package bill was to serve as the pattern for several later vocational education bills and stands as a hallmark of farsighted legislature.

Roberts stated,

> The Smith-Hughes Act (Public Law 347) provided a continuing appropriation for vocational education in agriculture, in trades and industry, and in homemaking and for teacher training in each of these fields. Funds were appropriated for the administration of the program on the national level. . . . The Smith-Hughes Act provided for a Federal Board for Vocational Education and a state board of not less than three members for each state. Each state was required to prepare a state plan for vocational education and to agree (1) that the Federal aided program for vocational education would be under the public supervision and control, (2) that the controlling purpose would be to fit for useful employment, (3) that the vocational education would be of less than college grade and designed to meet the needs of persons over 14 years of age who had entered upon or who were preparing to enter the occupation for which they were receiving training, and (4) that the state or local community or both would provide the necessary plant and equipment.[15]

Furthermore, to provide added proof of accountability, participating states had to make an annual report to the Federal Board showing the work done and results of fund management.[16] The Federal Board for Vocational Education consisted of the Secretaries of Agriculture, Labor and Commerce, the United States Commissioner of Education, and three citizens representing industry, agriculture and labor.[17]

The Smith-Hughes Act, named after its sponsors, Hoak Smith and Dudley Hughes, was signed into law

February 23, 1917. The act provides a permanent appropriation of a little more than $7 million annually for vocational education in agriculture, trade and industry, home economics, and teacher training.[18] The Act has been extended to all fifty states.

Arnold cites the Smith-Hughes Act as the first of many federal-state reciprocal agreements concerning vocational education. Stressing the close partnership theme, Arnold stated,

> The long and successful history begun by this Act's passage has been founded upon the unique concepts of the state plan and matching funds, which have created a true basis for equal partnership. Since 1917, the federal government has provided funds and helped promote, develop, and improve programs, but operation has remained with the states. Thus this cooperative relationship has developed into one of America's greatest resources.[19]

The ability of state vocational directors to transform federal dollars into viable programs is evidence that this cooperation has not been discounted at the state level.

The 29 year interim between 1917 and 1946 was sprinkled with funding measures for vocational education, and these apportionments were aimed at expanding and supporting the thrust of the established vocational programs. A legislative champion for vocational education, Walter F. George, and his associates inaugurated four bills which provided sorely needed program funds. These bills consecutively increased funds which, when added to the

annual $7 million Smith-Hughes appropriation, provided an account from which vocational educators could draw.

2. The George-Reed Act (Public Law 702) was introduced by Walter F. George and Daniel A. Reed. It was to provide an authorized annual increase of $1 million for four years (1930-34) to expand vocational education in agriculture and home economics. President Coolidge signed the bill February 5, 1929.[20]

3. The George-Ellzey Act (Public Law 245) was signed by President Roosevelt May 21, 1935.[21] This measure authorized $3 million annually for three years to be divided equally for training in agriculture, home economics and trades and industry. The bill, in a sense, replaced the George-Reed Act.

4. On June 8, 1936, a bill sponsored by Walter F. George and Braswell Deen was endorsed by President Roosevelt.[22] This 1936 act increased the funding from the previous $3 million short-term allotment to a $14 million dollar permanent annual contribution, thus increasing the yearly amount by over 400 percent. This increase occurred, oddly enough, when the U. S. Office of Education's funding was cut by a full third.[23] The established programs of agriculture, home economics, trades and industry were continued; and, for the first time distributive occupations training was underwritten.

Much credit for this successful lobbying is due the American Vocational Association. The AVA was an

outgrowth of merging the National Society for Vocational Education with the Vocational Education Association of the Middle West in 1926. The AVA is now the leading professional association in the field.[24]

Congress, during World War II, put more than $100 million into a program called Vocational Education for National Defense (VEND).[25] VEND provided funds to train seven million war production workers. Appropriations were granted from 1940 until the discontinuance of the program in 1945.[26]

5. The end of World War II coupled with the so-called "Bill of Rights" for veterans highlighted the imperative passage of the George-Barden Act (Public Law 586). This act which was authorized by Walter F. George and Graham A. Barden superceded the George-Deen Act and increased the permanent annual funding for established programs from $14 million to $29 million dollars. The measure was signed by President Harry Truman August 1, 1946.[27] Congress, however, did not vote the full appropriations for the George-Barden Act until 1956, because wide-spread funding for training veterans was available to training institutes.

1946 to the Present. The ten year interval from 1946 to 1956 was not a dramatic time for vocational education. Venn capsulized this era in print as he stated:

> The early 1950's were years of beleaguerment for vocational education. As the veterans finished their education, many shaky programs foundered . . . The arguement of being "fly-by-night" was hurled at vocational programs with-actually-little justification but considerable effect. The Federal school aid controversy was at its height, and the vocational program, a conspicuous instance of Federal aid to secondary education, was caught up in the arguement. Heavy spending on the Korean War brought forth demands for cutbacks in domestic spending, and states-righters said the Federal Government should get out of the program altogether. Labor and business support was lukewarm. Against these forces the AVA rallied its legislative allies, and the program scraped through its yearly congressional battles with only minor damage, most of which was repaired between 1955 and 1957. In 1956 practical nursing and fishery were added to the George-Barden Act.[28]

1. The Practical Nurse Training amendment of the Health Amendment Act of 1956 authorized $5 million a year for five years to states for extension and improvement of practical nursing training.[29] President Eisenhower signed the bill August 2, 1956.

2. The training act for the fishing industry measure authorized $375,000 annually as aid to states for training in fishing trades and related distribution occupations.

3. In 1958 the National Defense Education Act was passed. Title VIII of this act was later to become Title III of the George-Barden Act.[30] The purpose of the act was to train highly skilled technicians in occupations necessary for national defense. Initial funding was $15 million for four years. Essential to the program was the ability to train less than college grade technicians within the framework of the traditional college

curriculum. Funding was not withheld from institutions not granting a degree to trainees. Thus a high school, four year college, community college, and technical institute could act as an area vocational school if it offered a defense-related technical program of less than college grade and would not discriminately choose students from the local community.[31]

4. An act designed to retrain unemployed workers in depressed areas in occupations unique to those specific regions was the Area Redevelopment Act of 1961.[32] With an initial funding of $4.5 million, the Act lacked luster, according to Venn, because of these reasons:

a. The appropriations were too small.
b. Funds were restricted to designated redevelopment areas only.
c. Support allowances for trainees could run no more than sixteen weeks.[33]

5. The Manpower Development Training Act (MDTA) (Public Law 88-214) amplifies the basis of the Area Redevelopment Act. Nation wide emphasis on retraining was a plank in the program. Subsistance and transportation grants were available for trainees for a year's duration.[34] Preference for retraining was given the unemployed or underemployed workers with a minimum of three years of gainful employment. Twenty-five percent of all funding was for training students under 21 years of age, but those between 16 and 18 did not receive above $20 a week subsidies.[35] The Department of Labor and of

Health, Education and Welfare are jointly responsible for administration of the program.[36]

Training recipients can be schooled in any occupational program offered by a training school qualifying as a host institute. But many hard core unemployed have not become involved in the programs because of lack of skills necessary to fit them for training, ie., reading and mathematics. Initial adherence to national and local labor statistics indicating specific needs accounted for a high percentage of job placements; however, present trainees must rely more on individual initiative and interest to procure gainful employment.

6. The most current, liberally written and historically important vocational education act was signed into law December 13, 1963, by President L. B. Johnson. The Vocational Education Act of 1963, (Public Law 88-210) sponsored by Wayne Morse and Carl Perkins, marks an important milestone in the development of Federal-State partnership in vocational education.[37]

Mobly stated this law was, ". . . the most comprehensive vocational program to become law in the history of our country."[38] This legislation initiated a new permanent program with appropriations authorized for state vocational education programs amounting to $60 million for fiscal year 1964, $118 million for fiscal year 1965, $117.5 for fiscal year 1966, and $225 million for

subsequent years. The authorizations were in addition to the $57 million appropriated annually under existing laws.[39]

Ninety percent of the funds authorized for grants to the states were allotted on the basis of a formula which takes into account two factors: the population by age groups 15-19 inclusive, 20-24 inclusive, 25-65 inclusive; and the per capita income in each state.

Vocational education programs were authorized for persons in high school, for those out of high school available for full-time study, for persons who were unemployed, and for persons who had academic or other socioeconomic handicaps that prevent them from succeeding in the regular vocational education program.[40]

Funds would be used to provide occupational training for persons of all ages, levels of achievement, and all occupations except those requiring the baccalaureate degree. Teacher training, administration and supervision of programs, instructional supplies and equipment, development of instructional materials were recognized as necessary expenditures to assure vocational programs of high quality. Three percent of each state's allotment must be retained for these listed nuiances and must be administered by the state Board of Vocational Education. In addition, this legislation provided for an experimental four-year program for residential vocational education schools and payments for student work-study programs.

Area school facilities may be built with funds from this act; however, states must match on a 50-50 basis any dollars spent for construction of buildings.

The U. S. Commissioner of Education will administer ten percent of the annual subsidies for vocational education for the purpose of developing research, experimental, and pilot projects.

But the most pleasing aspect of the program to those who develop programs is that there was no restriction on the competencies potential trainees may pursue. This flexibility has reversed the specificity of the Smith-Hughes and George-Barden Acts and has opened the door for close cooperation between the training institutes and the local labor leaders.

An accompanying 1963 enactment bolstered the building program for vocational education institutes. This was the Higher Education Facilities Act of 1963. Title I of this act authorizes $230 million for the construction of undergraduate academic facilities, with 22 percent of that sum earmarked for public communities colleges, technical institutes, and two-year branch campuses of colleges and universities.[41]

The 1963 Vocational Education Act was indeed a highlight in the history of legislation; however, adjustments were needed. The Vocational Education Amendments of 1968 served to streamline the 1963 Act. The amendments dealt with guidelines, short-term and permanent programs,

research and development, curriculum development and personnel training.

A National Advisory Council on Vocational Education was appointed by the President. The Council suggests vocational education needs and possibilities of new investments in training projects. The states participating in the government funding of the 1963 Act must submit a three part plan for each year consisting of administrative policies of each state, a yearly calendar of programs which the state wishes to accomplish, and how these plans fit into a long range five year plan for each state. Accountability is demanded.[42]

Permanent funding, until further amendments arise, for established programs consist of $565 million for fiscal year 1970, $675 million for fiscal year 1971, $565 million for fiscal year 1972, and $565 million for fiscal year 1973 and for each succeeding fiscal year.[43] Consumer and Homemaking Education will be funded through 1972. The thrust of this section is to train youth and adults for the role of homemaker and wage earner. Cooperative vocational education programs where students attend school and work part-time were also funded through 1972. This attempt to rescue the potential school drop out may be funded as much as 100 percent with federal funds if local communities cannot muster enough money to share in expenses.

Work-study programs permit student employment, thus enabling these students to finish their specified training period. A limit on hours worked and subsidies paid are included in the program. An Exemplary Program and Project section calls for funding guaranteeing opportunity for program development. Any innovative project which will introduce students in school to career opportunities, guide school dropouts or advanced trained students presently in vocational programs toward gainful employment or promote cooperation between public education and manpower agencies will be underwritten by the act.[44] Residential School Projects will receive $105 million over a three year span to construct and equip facilities to house trainees between 15 and 21 years of age and to cover the cost of borrowing money in order to construct these facilities.

The research and training emphasis is covered by the 10 percent withholding of state funds which underwrites the research coordinating units of each state and allots support for research grants for agencies working for the states. Curriculum development, a much needed area in present education, is also underwritten by funds from the 1968 amendments. This funding is far ranging covering everything from jobbing out curriculum writing to training those who can produce pertinent programs.

Personnel training, considered by some as the most obvious weakness of current vocational education,

is also supported by the 1968 amendments. A U. S. Government pamphlet states,

> Institutes of higher education that offer approved programs of graduate education in vocational education are eligible for support of their leadership development programs. Experienced vocational educators may be enrolled in these programs for up to 3 years of advanced, full-time study.[45]

This provision is known as Part F-Training and Development Programs for Vocational Educational Personnel--of the Education Professions Development Act.

Briefly stated, the history of support by the Federal government for vocational education has been mostly short-term and restrictive. Because of pressing needs for either national defense or industrial development, legislators saw fit to provide funding and program elasticity for training programs which seemed to fill the gaps. Current acts have provided a more cosmopolitan approach with sufficient funding to inaugurate innovative plans. Certain weaknesses still remain; however, and Section III of the Review elaborates on this theme, leadership training.

III. EDUCATIONAL LEADERSHIP: HISTORICAL REVIEW AND PERSPECTIVE

The scientific study of the phenomenum of educational leadership has been a rather recent development. Immediately following World War I, numerous studies concerning leadership were conducted. Whether stimulated by

leadership experiences of the war or as a purely intellectual endeavor, the social sciences were beginning to come of age. Sociological, anthropological and psychological studies of leadership flooded the professional journals and bookstands.[46,47,48,49] Nor did the research seem to be adversely affected by the economic and social depression of the late 1920's and 1930's. Moore,[50] Baldwin,[51] Clem and Dodge,[52] and Garrison[53] were among the major contributors to the swelling literature on leadership. In 1933 when Smith and Kreuger completed their summary of the literature on leadership, they listed one hundred and twenty-one items in the bibliography, almost all of which had been written after the war.

Leadership studies throughout the thirties continued to increase. Attention focused on the youth of the country and their reactions to various leadership "styles." This concern with the attitudes and feelings of the nation's youth was due in no small part to internal events occurring in pre-war Germany. Studies by German authors reflected the concern of a world vitally interested in the effects of leadership on the behavior and attitudes of youth.

Perhaps the most significant study of leadership derived from this era was the work of Lewin and Lippitt[54] which opened up new dimensions of leadership to be studied, as well as providing different experimental designs to achieve this goal. Interestingly enough, Lewin and

Lippitt's work was perhaps the last significant contribution to the study of leadership prior to World War II. The war, of course, curtailed most research efforts outside the military.

The phenomenal growth of industry and its ensuing prosperity, and the increasing social complexity of our nation brought forth a host of newer studies on leadership. This tremendous expansion required enormous numbers of trained personnel, and the subsequent demand for leadership was apparent. Industry's concern for leadership and leadership training became apparent in several post-war studies.[55,56,57,58,59] Supported by funding from government and military interests as well as private sources, leadership studies at colleges and universities multiplied. Bass[60] wrote the first of his more than forty articles and books on the subject. From the efforts of Hemphill[61,62] and Stogdill[63,64] was to evolve the earlier versions of the Leadership Behavior Description Questionnaire.[65] White and Lippitt[66] performed their classical studies on laissez-faire-democratic-authoritarian groups, paralleling the earlier study of Lewin and Lippitt.[67]

The second half of the decade was evidence of a growing interest in educational leadership. Hagman and Schwartz[68] led the post war parade of authors studying the dimensions of educational leadership. French, Hull and Dobbs,[69] Mort,[70] Morphet, Johns and Reller,[71] contributed widely used works on educational leadership.

Andrew Halpin[72,73] following in the tradition of Stogdill, completed his earliest of many studies dealing with the behavioral traits of leaders. Tannenbaum, Weschler, and Massarik[74] also contributed more empirical basis for understanding leadership behavior. Impetus to the study of educational leadership was given a great boost by the studies of Hemphill, Griffiths, and Fredrickson,[75] Gross and Herriott,[76] Sanders, Phillips and Johnson,[77] and Halpin.[78] Griffiths'[79] efforts on educational leadership are considered prerequisites for anyone conducting serious study in the field.

Cartwright and Zander point out some of the inherent difficulties in attempting to define leadership,

> To some, leadership is a property of a group, while to others it is a characteristic of an individual. To those who emphasize the group, leadership may be synonymous with prestige, with the holding of an office, or with the performance of activities important to the group. To those who stress the individual, however, leadership may mean the possession of certain personality characteristics such as dominance, ego-control, aggressiveness, or freedom from paranoid tendencies, or it may mean the possession of certain physical characteristics such as tallness or an impressive physiognomy.[80]

A brief review of the literature concerned with leadership will yield some indication of the number of definitions and conceptions with which the notion of leadership is plagued. This diversity does not contribute substantially to the ability to investigate empirically this phenomenon and obtain consistent results, which, in turn, raises questions concerning the validity and

generalizeability of any experimental evidence. Many of the apparently contradictory research results are caused by this variation in definition and criteria. Some of the most publicized research efforts concerns the attempt to identify leaders by personality traits.[81,82] Some critics of this approach have listed past failures, concluding that there is no value in continuing this futile effort. There seems to be at least two crucial failings of past leadership studies:

1. Very few, if any, of these studies use the same personality characteristics. Moreover, when they do, they often choose one which is antiquated and not psychometrically sound.

2. The criteria used vary from study to study, and more often than not, are subjective judgments or supervisor's ratings. Without denying that there is some basis for subjective judgment, this is still a poor criterion.

In short, these experiments, although seemingly inconsistent and contradictory, do not necessarily demand the conclusion that it is impossible to identify a leader by personality assessment. Concerning the tendency to disparage leadership-personality research, Darley stated,

> it has become fashionable to identify leadership as related to situations and as relatively uninfluenced by individual traits. We cannot, I think, brush under the rug the problem of leadership traits as easily as we have seemed to do in recent years.

Gross and Herriot[83] indicate a stance which could easily represent the majority of researchers in the field of leadership,

> Although we, like most present-day students of leadership, reject a <u>unitary</u> trait theory of leadership,

> we do not reject the possibility that, in certain situational contexts, specific traits of individuals may be associated with the leadership.

Another approach to analyzing the leadership theme is "styles of leadership." The authoritarian-democratic classification of White and Lippett[84] is perhaps the most well known approach to analyzing leadership. Perhaps the biggest weakness inherent in such an approach is that to admit to more than forty kinds of leadership, each with varying degrees of effectiveness, is to confuse the problem of identification and selection quite badly.

Without a doubt, in almost any situation, the leader needs certain traits; he is motivated by personal drives and external forces; he performs certain functions indigenous to his position; he acts in a particular way according to the character of the group and, finally, he shares certain leadership tasks with the members of the group.

IV. LEADERSHIP IN VOCATIONAL-TECHNICAL EDUCATION

The remainder of the research for this paper deals with a need for and a review of leadership training opportunities that have been provided for vocational educators from the pre-Sputnick era to the present day.

Emphasis in this section will be centered on attempts to train leaders at the local level involving student groups and also the current efforts to provide

nation wide training programs for present and potential adult leaders in vocational-technical education.

Thelen[85] summarized the difficulty of designing a conceptual model for the training of modern educational leaders:

> The modern view of leadership is that it is inadequate to the needs of its times. We live in a time of confusion, of transition between an order, simpler order and a new order whose shape is barely visible. We feel we are generating or becoming aware of problems at a faster rate than we can solve them.

Halpin[86] shared Thelen's concern for the difficulty involved in establishing a training model for educational leaders when he warned the designers of these programs not to overlook the responsibilities imposed upon the leader by, ". . . the institutional realities of the formal organization of which he is a part."

Local Emphasis on Leadership Training

Sanders[87] reported a twelve year leadership training program for state FFA officers in the state of Georgia. Prospective FFA leaders from throughout that state were given a two week intensive workshop in such leadership skills as parliamentary procedure, constructive criticism, training in FFA rituals and extemperaneous speaking. Maddox and Binkley described the program of the state of Kentucky's FFA Leadership Training Center. Each week for seven consecutive weeks two hundred prospective leaders

of Kentucky FFA chapters are given both instruction and supervised practice in all phases of democratic leadership.

Baum[88] reported on a project conducted by Brooklyn College to train local vocational-technical leaders. Group work techniques which stressed practical group leadership experiences formed the bulk of the program.

Strain[89] published a report of four FFA Officer Leadership Schools held at various campsites throughout the state of Nebraska. One hundred twenty-five leaders were trained each week in a program which stressed leadership games and practice.

Moffitt,[90] at the conclusion of his training program to assume the presidency of the Mississippi FFA Association stated, "The FFA is a mill for turning out tomorrow's leaders, agricultural leaders, yes--but leaders in all fields and endeavors." He cited as particularly beneficial leadership training experiences he gained in judging, parlimentary law, public speaking and various comparative activities with local community organizations.

Hill[91] echoed Moffitt's enthusiasm for leadership training programs for FFA officers when he stressed the fact that FFA leadership training programs were developing leaders for vocations other than agriculture. He further stressed the need for farmers to work through organized political groups to solve their economic and social problems.

Holdridge[92] published a report on the state wide FFA fair held in Madison, Connecticut. Local FFA youth assumed leadership in all phases of planning and operation of this yearly event.

Espenschied[93] explained a district wide FFA Leadership Training School which provided a specialized training program for each FFA chapter officer in the state of Illinois. Local chapter Presidents, standing committee chairmen and treasurers were given intensive one week workshops which stressed leadership skills demanded by each position.

Bailey[94] told of a collegiate FFA chapter at East Texas State College which trained college students in leadership skills based on humanistic principles. Each trainee was required to gain firsthand experience in some phase of rural agricultural leadership before completing his program.

Swecker[95] stressed the need for increased efforts to train vocational leaders at all levels--local, state and national. Regarding agricultural education he stated that, ". . . a great many of our FFA members are receiving little or no training in leadership development." He called for a curtailment of many frills in agricultural education and a restoration of training in leadership principles.

Robinson's[96] poll of Kansas Vocational agricultural teachers on leadership training school conducted from

1952-1957 revealed that 59 percent of the respondents felt that sufficient emphasis was placed on state level leadership training, 69 percent approved of the emphasis on district level leadership training and 55 percent were supportive of leadership efforts at the local chapter level. Ninety-three percent of the total number polled indicated that continued emphasis should be given to leadership training as the primary objective of the programs.

Gray[97] detailed the program offerings of the state of Kentucky's FFA Leadership Training Center. Topics covered during each week's workshops included: Effective Democratic Leadership, Qualities of Leadership, Goals for Developing Leadership, and Practicing Leadership. All student trainees participated in intensive small group work experiences to develop stated skills.

Doering[98] described activities of the Wittenberg, Ohio, FFA chapter which has resulted in seventeen state and national awards for leadership excellence. Students in this local chapter traveled over eight thousand miles during eighty days to compete in various competitive programs which stressed leadership skills.

Witmer[99] reported on a one day leadership training workshop for sixty-six students and eight teachers held at Sunbury, Pennsylvania. Ninety percent of the participants felt that the skills learned justified being absent from school.

Rose[100] proposed the thesis that the FFA creed obligated FFA advisors to stress leadership training. He identified "working together" and "citizenship training" as the highest priority goals for leadership training.

Need for more creative leadership in vocational-technical education was voiced by Kramer[101] when he called for industrial education leadership to work under conditions for progressive awareness of democratic forces that permeated American society in the early 1960's. Gaylord[102] called for leaders in vocational-technical education to beget leaders like themselves. He identified the "bona fide leader" as one who developed leadership in others to the degree that the organization might continue without its leaders.

Johnson and Dowdy[103] were among the earliest leaders in vocational-technical education to realize the contribution to be made by the social science disciplines to the understandings of the underlying forces affecting vocational-technical education. They called for future leaders in vocational-technical education to seek understanding of the "macro-society." The macro-approach, they stated, regards analyzing the whole problem by seeking aggregative causes and effects.

Olivo[104] supported Johnson and Dowdy's plea for enlarging the vision of future vocational leaders when he suggested that any new leadership training programs undertaken in New York state include course work in, "social

and psychological foundations needed to critically assess programs of vocational education in terms of current world issues."

Atherton[105] commented on what he regarded as the basic weakness in most existing leadership training programs in vocational-technical education. The need for the leader to stop talking and listen more. His admonition to his colleagues in leadership training was to, ". . . observe and listen, rather than do the talking."

Nelson[106] called for increased efforts to train agricultural spokesmen. He expressed a preference for much more specified training in public speaking skills.

Javornik,[107] advisor to the Indiana County, Pennsylvania, FFA chapter, reported on a leadership training workshop for nine local schools and one hundred FFA leaders. The students planned and conducted the entire leadership training experience and received specific training in an office of their choosing.

Lewis[108] detailed events of a five day concentrated learning experience for FFA leaders in Maryland. Leaders from other FFA chapters around the state were brought to Easton for training future chapter leaders. Each participant was expected to demonstrate specific leadership skills he learned.

Johnson[109] reported on a leadership training camping experience conducted for two hundred members of the New Farmers of America (Black) held at S. B. Simmons Memorial

Camp in South Carolina. Each participant was given a variety of leadership experiences in planning all camp activities, preparing speeches and contests, presiding over meetings, and conducting recreational activities.

A Call for Leadership Training

Atherton[110] complained that many leadership activities were not promoting desirable human relationships. He detailed specific steps for planning and conducting meetings that he felt would result in improved human relationships.

Beam[111] expressed concern that vocational leaders must shift their leadership style to a group oriented approach which promised greater opportunities to develop higher group cohesiveness. He reported details of a training program to equip 300 practicing agriculture teachers in the state of North Carolina with group oriented leadership skills.

The passage of the Vocational Education Act of 1963 brought increased pressure on the need to train leaders for vocational-technical education. Patton[112] saw the input of federal funds as making it possible for vocational leadership to engage in long range planning. AVA president John A. Jarvis[113] cautioned that additional funds and expansion were not the panacea to the ills of vocational education. He would have teachers and administrators accept the responsibility for making future prospects,

". . . not merely new and bigger, but also improved and better."

The American Vocational Association[114] reported that the Ford Foundation had awarded one million dollars to improve vocational-technical education by training more and better teachers and administrators and funding experimental programs.

Feirer[115] urged leaders in vocational education to seriously analyze the future needs for trained personnel before undertaking new directions in programming. He urged that vocational education initiate a more cooperative relationship with industry to insure that programs designed meet real needs.

Cunningham's[116] message to all educational leaders could have been meant specifically for vocational education leaders when he revealed that the most important task of the modern educational leader was to develop a climate for innovation and change.

Swanson[117] called for vocational education's leaders to set priorities for expanding vocational education funds. His personal list of priorities would include (1) expanding teacher training programs, (2) developing research, experimental and pilot projects (including administrator training programs), (3) luring aid from industry, labor and government, (4) developing more effective programs for guidance and counseling.

Scarborough[118] stressed the greatest needs by future leaders in vocational-technical education. He would emphasize problem solving skills, respect for others and a futuristic outlook.

Christensen's[119] message to his fellow teacher educators was to identify and train those students for leadership in vocational education who exhibit a high degree of organizational ability. He detailed specific behaviors that one might employ to ascertain one's organizational ability as it relates to specific events.

Current Leadership Training Programs

This selection of citations underscores the theme of training programs for adult leaders who have been identified as present and potential leaders in vocational-technical education.

1965 saw increased attention given to the problem of providing leadership in vocational education that was adequate to the demands of the times. Fred Wilhelms[120] summed up the feelings of many concerned persons when he said:

> One solid fact stands out: The Vocational Education Act of 1963 not only poured in unprecedented amounts of money, but also ripped the old rigidity wide open. Right now we are exceptionally free to dream up creative ideas and to do whatever our best professional judgment says we ought to do. But functionally, that freedom may be short lived. Everybody knows that the "old" vocational education had gone too rigid, too narrow, too stereotyped--that just more of the same will not be good enough. We have a little time now to break the mold and dream and dare.

Olivo[121] echoed Wilhelms' concern when he called for leaders of a broader vision and conviction than any other period in history. He further stated that the shortage of such leadership was acute and that little was being done within the various states to identify and to provide opportunity to prepare these leaders.

Lamar[122] made a plea for renewed efforts to redesign leadership training programs in vocational education. The basic thrust of such programs, he argued, should be to prepare leaders who would assume the offensive in developing new and comprehensive vocational education programs.

Knuti[123] argued that outstanding classroom teachers in vocational education should be elevated to the level of leadership commensurate with existing state and national leadership who were involved in national level decision making.

Evans[124] proposed that immediate use should be made of the 37 percent of each state's allocation to Vocational Education Act funds for "ancillary" sources to improve teacher education, administration and supervision, evaluation and to initiate special demonstration and experimental programs.

Nerden[125] expressed concern that more adaptable and flexible vocational education programs that were being evolved would dictate greater skill, creativity, ingenuity and inventiveness on the part of the educational leader.

Landon[126] summarized the impressive list of programs created by the Vocational Education Act of 1963 and culminated his remarks with the following statement:

> As efforts are being made at the federal, state, and local levels to get the new, enlarged and updated programs of vocational education in operation, the biggest single problem encountered almost everywhere is that of securing qualified leaders.

He further argued that vocational leadership prospects should be recruited from among present teachers of practical arts and vocational education, from business and industry, and perhaps from retiring military personnel.

Olivo[127] reported on a leadership training program advanced by the New York State Department of Education, Division of Industrial Educators. Twelve potential leaders in vocational-technical education were identified and exposed to an intensive leadership training program coordinated by the State University College at Oswego and state department officers. Actual training for these potential leaders was conducted in the schools with selected vocational leaders in the state. This field experience was followed by short term course work on campus. The culminating activity was a six month on-the-job experience as a supervised intern. Olivo reports that ten of the twelve leadership trainees were employed in new positions that had not existed six months earlier.

Hodges and Wenrich[128] reported on an experimental program to identify, select and train persons for leadership roles in vocational education in the state of

Michigan. Two hundred fifty-four candidates qualified for the training program and forty were selected for an experimental training group. The program for these trainees consisted of an intensive eight week workshop and a supervised internship experience. The "control" group was only given an internship as a primary means of developing leadership skills.

Feirer[129] expressed a concern for the lack of funds available for leadership training in his June, 1966, editorial in Industrial Arts and Vocational Education. He also expressed the need for improved communication within the entire field of vocational education, as well as between fields allied with vocational education.

Additional evidence of concern for leadership improvement in vocational education was demonstrated when the American Vocational Journal initiated the first in a series of yearly issues devoted exclusively to the problems of leadership in vocational education.

Burkett,[130] Editor in Chief of AVA, set the stage for future educators when he said:

> Leadership is coming up in a vast, new environment. The leader who can reconcile, evaluate, and direct these divergent concerns and come up with a program that will serve the needs of all people in every community will have accomplished what, in the minds of many, is impossible.

In that same issue Montgomery[131] commented that the special issue on leadership had been developed for the purpose of making all vocational educators more

aware of the need for vision, creativity, and decision making in leadership behavior.

Phillips[132] argued that existing and prospective leaders in vocational education must begin to function from a sound theoretical base to give consistent direction to their leadership behavior.

Logan[133] documented results of a study by the Oklahoma Vocational Research Coordinating Unit which studied personnel needs at the state and district level in vocational education.

This study revealed that if all available graduates from across the country were placed, only 50 percent of the available openings would be filled.

Wenrich[134] reported further progress in the University of Michigan Leadership Development Program for Vocational and Technical Education, the purpose of which was to identify vocational and technical teachers with high leadership potential and to prepare them for local administrative and supervisory positions. He stressed that participants selected were being given training in initiating change within existing structure for vocational education, as well as maintaining, rather than changing, established structures.

Knuti[135] summarized efforts by fifteen Montana agriculture teachers who attended summer sessions at Montana State University. In addition to providing a basic text for a high school unit on leadership, Montana

gained fifteen teachers who were made more knowledgable about leadership in occupational training.

Low[136] gave an updated report of the leadership training program initiated in 1964 by the State University College at Oswego and the New York State Department of Education. Not only had thirty new vocational-education centers been opened in the State of New York during the ensuing three years, but their program alone was responsible for preparing forty-two persons serving in a variety of leadership capacities in the state.

Hirshfeld and Bregman[137] complained of the lack of qualified, experienced leaders in distributive education. This void, they claimed, was not only due to the growth and expansion of distributive education, but the lack of local, state, regional or federal programs geared to the continuous development of leadership in distributive education.

National Efforts for Leadership Training

Cotrell and Valentine[138] reported on the first of the series of National Leadership Development Institutes in Technical Education coordinated by the Center for Vocational and Technical Education at Ohio State University and funded by the U. S. Office of Education. Five two week Leadership Development Institutes were held for current and potential leaders in regional centers at Colorado State University, Oklahoma State University, Rutgers, University

of Florida, and University of Illinois. One hundred ninety-five participants from forty-six states and Puerto Rico who were employed in administrative or supervisory positions at the state and local level were given training in specified leadership skills. Not only were participants rated on demonstration of leadership skills, but were asked to produce a plan for improving programs in their own states.

Rice[139] reported on the National Conference on State Department Leadership in Vocational Education. Fifty-three representatives from nineteen states and the District of Columbia and Canada attended the conference at Ohio State University to assist in identifying state leadership needs and to develop state leadership programs.

Rice[140] detailed ingredients of the Vocational Technical Leadership Training Seminar held at the University of Missouri in July, 1967 in a report from the University of Missouri. Sixty vocational leaders from eighteen states met for a two week seminar which stressed experiences in conference leadership, responsibility of leadership in vocational-technical education, trends and future developments and evaluation of programs in vocational-technical education.

Beall and Smith[141] gave an account of a Leadership Development Seminar in Vocational Technical Education held for fifty-four state level leaders in twenty-three eastern states, District of Columbia, Virgin Islands and Puerto

Rico. Major topics dealt with included adult vocational technical education, program planning and budgeting systems and reporting of evaluation.

Himmele and Smith[142] published an account of an Evaluation Conference on Leadership Development Seminars in program planning, budgeting and evaluation held at College Park, Maryland for thirty-four participants from throughout the United States. Primary attention was focused upon the rationale, methodology and evaluation by leadership utilizing program planning and budgeting systems.

Despite the landmark efforts to upgrade leadership in vocational-technical education, Stovall[143] lamented that it was imperative for the field of home economics to recruit and train more active leadership that is future oriented.

Sybouts[144] described a project initiated by the School of Education at the University of Nebraska which developed simulation materials to orient forty-eight school administrators to vocational education needs and programs. Utilizing simulated "in basket" techniques as the primary vehicle to develop understanding, this study found that the school administrators trained experienced positive changes in attitude regarding vocational education.

Wenrich[145] reported results from the evaluation of Michigan's state program for the development of persons for leadership roles in the administration of local programs

of vocational and technical education. Seventy-one graduates from the 1964-67 programs were compared with forty-eight who were interviewed but not selected for training. Results revealed that the leadership trained group scored higher on every measure of leadership ability. In addition, it was found that the combined eight week on-campus plus supervised internship plan was the best methodology for training.

Allen[146] published an account of the National Leadership Development Service for State Directors of Vocational Education conducted by the American Vocational Association and held in Washington, D. C. Thirty-four state directors of vocational education were trained for one week in developing skills of problem identification and solution, interpersonal competence, and developing a model for future directors.

Russell[147] described a three day leadership camp held for student FFA leaders at Western Illinois University in August, 1969. Outside resource personnel were utilized to work with each group of elected officers and separate sessions were held on facets of business management.

Ralster and Tobert[148] submitted a report on the Vocational Education Leadership Training Program held at Georgia University. A twenty month period was divided into three distinct training phases and twenty-one secondary and post secondary vocational educators participated in a program designed to acquaint each member with

responsibilities of leaders in vocational education programs, on campus study of specific administrative problems in vocational education and a supervised internship in administration of vocational education programs.

Seeland[149] described a later Leadership Development Seminar in Vocational and Technical Education held at College Park, Maryland, for thirty-four selected state and local vocational leaders from twenty-one states. The purposes of the seminars were to develop an understanding of the critical areas of need for vocational education programs; to become aware of desirable programs development to meet specific needs; and to develop desirable coordinating techniques.

Meckley[150] reported positive results on the use of simulation training in planning vocational education programs and facilities for state level leadership development. Simulation materials were designed to equip participants with skills in program and facility planning and interpersonal conflicts.

Summary

This chapter has presented the historic precedent for vocational training, the history of the federal government's supportive role for vocational-technical education, a historical review and perspective of educational leadership, and current leadership training in vocational-technical education both locally and nationally.

Federal programs were established to train future employees whose main task seemed to be the development of our country. Federal funds and human effort were funneled into these programs, but little emphasis was given to leadership training where considerable stress should have been placed. 1963 witnessed an awakening in vocational educational program developers' thinking regarding leadership training. The 1968 amendments to the 1963 act further supported this theme.

Various authors agree that leadership is an elusive and ill-defined quality, but nevertheless a quality and quantity in short supply. Numerous pleas have been voiced for programs to instruct and prepare leaders with skills enough to direct the burgeoning vocational-technical endeavors.

Evidence presented indicates a current wide spread interest in training leaders, plus state and federal support to underwrite identified programs.

It appears, however, that not enough competent leaders are available and that there is little continuity in the training process for current and future vocational-technical leaders.

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CHAPTER III

PROCEDURES OF THE STUDY

This chapter explains the procedures used in the selection of the instrument used; the identification and selection of the agency, students and teachers; the administration of the instrument; and, the plan for reporting and analyzing the data.

I. SELECTION OF THE INSTRUMENT

The instrument used in this study was the Educational Attitudinal Synthetic Plane Placement Instrument which consists of two main components, the Kerlinger-Kaya Progressive-Traditional Educational Scale and the matching of selected students and teachers with established problems. The EASPP was recently developed and tested[1] by Felix Garcia Jr. with John P. Grillo designing the mathematical algorithms and complementary computer programming. The EASPP presents a graph plot representing a synthesis of two respondents' progressive and traditional scores.

The abstract half of the EASPP, the Kerlinger-Kaya Progressive-Traditional Educational Scale (K-K), (See Appendix I) was designed to specifically measure attitudes toward education.[2] In a series of statistical analyses within which Kerlinger and Kaya employed factor analysis,

analysis of covariance, and calculated a rho using the Spearman-Brown formula,[3] test results, recorded in Educational and Psychological Measurement[4] indicate the K-K scale could differentiate among criterion groups. Their results were:

1. the logical and empirical validity of the scales seems established, and
2. the scales can be used in group research in which differences in educational attitudes among various groups is a matter of interest.

These findings relate specifically to this study which seems to parallel the selected groups Kerlinger polled, ie., graduate school students (teachers at T V-I) and undergraduate students (students at T V-I). The author knew that several T V-I instructors who participated in this study were graduate students as well as teachers.

Furthermore, the EASPP containing the Kerlinger-Kaya was designed not only to differentiate among groups concerning progressive and traditional educational attitudes but also to present a combined score (graph plots) of both participants concerning selected problems. This was the purpose of the research, to obtain scores, plots and interpretations related to selected problems representing school policy at the Technical Vocational Institute.

II. THE IDENTIFICATION AND SELECTION OF THE AGENCY; STUDENTS AND TEACHERS

Results from a current study done by a Data Processing class at the Technical Vocational Institute provide a description of where the data for this investigation was obtained.[5]

> T V-I is a public post secondary school providing technical and vocational education for adults. Instruction is offered in appropriate areas of humanities as well as in technical and vocational skills. T V-I serves the greater Albuquerque area as well as the surrounding counties and is supported from local property tax apportionments.
>
> The average age of the students polled for the survey was 25 with about sixty-five percent male and thirty-five female. Certifications and diplomas can be awarded upon completion of a designed course of study to obtain an identified competency. Majors range from automotive mechanics, auto body repair, machine trades and welding to practical nursing, office education, electronics, and data processing.
>
> Approximately 75 percent of the interviewed students had finished grade 12, and the average grade completion of all students was 11.6 years.
>
> Over half the students, residents of the state, come from outside the Albuquerque area but from within the state of New Mexico.
>
> More than half--54 percent--of the students are single, slightly less than 30 percent are married, and the remainder are either divorced or separated.
>
> Direct financial assistance from some government agency--Veteran's Administration, Model Cities, federal Manpower Development Training Act, Work Incentive Program, Bureau of Indian Affairs, and Division of Vocational Rehabilitation--went to nearly half the enrolled students polled.

From this cosmopolite group, the investigator selected two representative groups, Machine Trades and

Data Processing, from which to gather data. This was a sampling of convenience.

Instructors at T V-I, by state law, had to be vocationally certified which usually meant at least a college degree with commensurate years of work experience.

III. ADMINISTERING THE INSTRUMENT

The author obtained permission to test students who wished to cooperate from the Day School Director and appropriate teachers who had classes containing identified students and then constructed a testing schedule. This investigator administered all opinionnaires to all participating students. The average time for the student sessions ran approximately 25-30 minutes, and the span of testing took one week.

The testing of students was done in the classroom while teachers returned their opinionnaires upon completion.

The total number of respondents to the Kerlinger-Kaya Scale was seventy students and fifteen teachers. None refused to answer the questions on the K-K.

Students were administered the K-K first and asked to identify a teacher whom they felt best fit the listed problem representing the T V-I policy. Lists of teachers who taught students in their advanced major courses were presented from which students selected teachers' names. After students had thinned the number

of identified teachers to fifteen, these teachers were then contacted, and they followed the testing procedures of the students with the one exception of author supervision. Teachers were asked to list student names with the identified problems from T V-I policy.

IV. REPORTING AND HANDLING THE DATA

All student and teacher responses were calculated to obtain median scores for their progressive and traditional educational attitude from the Kerlinger-Kaya Educational Scale. These median scores were transferred to IBM punch cards and run through the computer program developed by John P. Grillo, a co-developer of the Educational Attitudinal Synthetic Plane Placement Instrument.

The computer program condensed the quantities of respondents' median scores into a graph plot. Accompanying figures and tables (Chapter IV) were developed to present this data for reader perusal. Analysis of the data was done considering Chapter I problem statements and the classification principles (Appendix III) developed by Felix Garcia Jr.

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CHAPTER IV

ANALYSIS AND INTERPRETATION OF THE DATA

This chapter includes definitions of constant and variable as they relate to the problem statements in Chapter I. In addition, the instruments used will be described, a classification of "progressive" and "traditional" respondents, the classification of attitudinal interactions on the Educational Attitudinal Synthetic Plane Placement Instrument, analysis of the data, and extractions of pertinent data.

I. DEFINITION OF VARIABLE AND CONSTANT AS RELATED TO CHAPTER I PROBLEM STATEMENTS

For the purpose of this study the term constant will be further defined as that plotted relationship of the absolute value of X and Y scores less than 3.00. Any interaction value falling below 3.00 is considered too weak to be applicable and therefore, falls into the null area.

A variable, conversely, is when the absolute value of both X and Y scores is equal to or greater than 3.00.

II. DESCRIPTION OF INSTRUMENTS USED

Garcia's study, An Educational Attitudinal Synthetic Plane Placement Instrument, developed a

rationale and employed mathematical algorithms to measure and analyze attitudinal interactions. He differentiated between meaning of attitude and belief by citing Rokeach's definition of an attitude:[1]

> An attitude is thus a package of beliefs consisting of interconnected assertions to the effect that certain things about a specific object or situation are true or false, and other things about it are desirable or undesirable.

Garcia further quotes Rokeach to define belief:[2]

> A belief is any simple proposition, conscious or unconscious, inferred from what a person says or does, capable of being preceded by the phrase, "I believe that . . ." The content of a belief may describe the object of belief as true or false, correct or incorrect, evaluate it as good or bad, or advocate a certain course of action or a state of existence as desirable or undesirable.

These definitions are germane to this study since the interrelationship of beliefs represent an attitude, and the interrelationship of attitudes would be the visible plot on the instrument graph.

To further support this thesis, Sears[3] used an attitude as a relational concept that functions as a dyadic unit "which describes the combined action of two or more persons." The results of this combined action becomes plots on the graph and, therefore, indicates a combination of both party's attitudinal interaction.

To provide for the respondent's exercise of choice accommodating personal belief, plus allowing for these beliefs to meld into attitudes, the Educational Attitudinal Synthetic Plane Placement Instrument (EASSP) relies

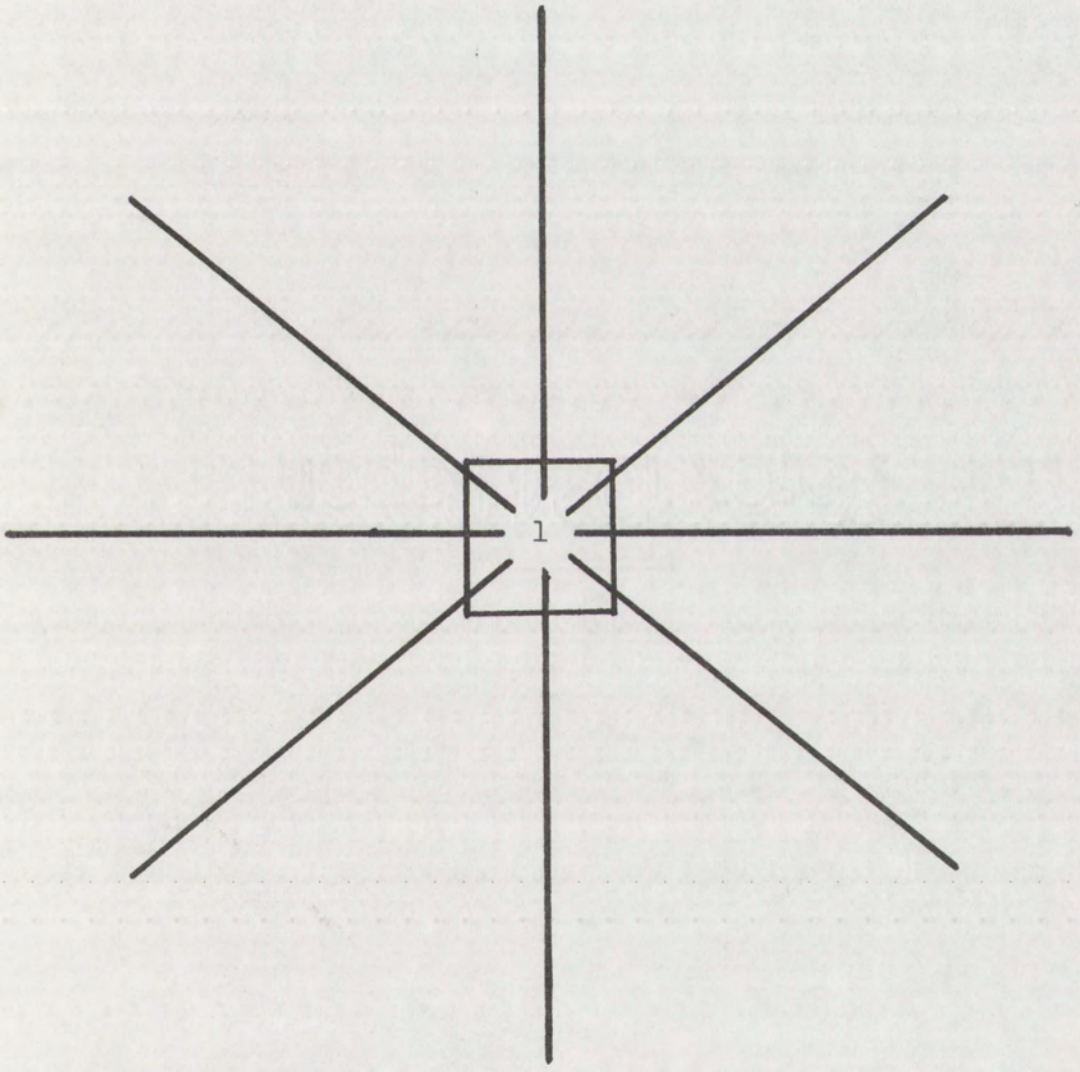
on both the abstract and experiential ingredient. The abstract part is the Kerlinger-Kaya Progressive-Traditional Educational Scale. Selected problems either from the Kerlinger-Kaya scale or extrinsic problems where respondents identify teachers or students represent the experiential part. The respondent's scores on the Kerlinger-Kaya matched with the identified person's scores on the Kerlinger-Kaya (consisting of both a progressive subscale and a traditional subscale score for each respondent) are numerically digested through a combination of mathematical algorithms developed by John P. Grillo. The culmination of both respondents' subscale scores (four total scores) is a plotted graph point on the EASSP graph and is thus capable of interpretation.

The EASSP was adopted for the current study. Whereas Garcia selected eight intrinsic themes from the Kerlinger-Kaya Educational Scale, this study offered two extrinsic problems, attendance and grades. Garcia also confined his null hypothetical area to the exact center dot on the graph--indicating a null contribution of attitude toward a selected problem by both parties. In this study the null area was increased. Figure II shows the original and expanded null hypothetical area. See the symbol 1 under Figure II below. The graph center dot on the Educational Attitudinal Synthetic Plane Placement in Garcia's study represented an area of non

interrelated beliefs. For this study the center section will be an area which contains not only the non interrelated beliefs--represented by symbol 1 in Figure II--but also some weak interrelated attitudes. The rationale for the modification of the null hypothetical center assumes that the lack of intensity would tend to indicate the lack of potential for the generation of a variable that could interact with another variable. For example, scores falling below 3.00 for either participant would be considered very weak and would not be included in plots for interpretation.

Figure II

Original and Expanded Null Hypothetical Area



1 = Garcia's original null hypothetical area

□ = the expanded null hypothetical area

Intensity (the distance from the center dot) plus directionality (the visible plot on either a coordinate or diagonal or within an octant) are additional features of Grillo's algorithms.

If a teacher with a highly calculated progressive or traditional score identifies a student with the same type of score, the interrelationship is considered strong and would tend to indicate a propensity for change since both elements of the interaction have strong attitudes.

A plot falling outside the 3.00 area would seem to indicate that the attitudinal interaction is a strong one and is considered a variable in relation to the theme. This particular plot would be considered to be a variable by means of the interaction. Thus the policy itself must be considered changeable by means of the interactors.

III. TEACHER AND STUDENT PROGRESSIVE AND TRADITIONAL CLASSIFICATIONS

This section includes Table I demonstrating the students' and teachers' traditional or progressive numerical classification according to their Kerlinger-Kaya subscale scores. These scores are obtained from the computer print out sheets (Appendix IV to IX).

Teachers who identified themselves by progressive subscale scores totaled five of fifteen or 33 percent progressive, 27 percent traditional, and 40 percent cancellations or non contributors. Students who

identified themselves by progressive subscale scores totaled forty-two of seventy or 60 percent progressive, 16 percent traditional, and 24 percent cancellations or non contributors. These totals indicate the greater percent of selected teachers and students held progressive educational attitudes while the lesser percent held traditional educational attitudes.

Table I

Identification of Numbers of Interaction Participants by Their Progressive or Traditional Subscale Scores

	Progressive Subscale Scores	Traditional Subscale Scores	*0.00	
Faculty	5	4	6	15
Students	42	11	17	70
Totals	47	15	23	85

* The 0.00 score represents a cancellation of subscale scores by respondents; i.e., one who had a 3.00 progressive median score and a 3.00 traditional median score would have a 0.00 median score.

Five out of the eleven students identified as possessing traditional scores represented machine trades and six students were from data processing. Those forty-two students identified as progressive were represented as follows:

Machine Trades	II	4
Machine Trades	III	6
Data Processing	II	6
Data Processing	IV	8
Data Processing	V	8

Table I also reveals that five teachers held progressive subscale scores.

Attitudinal Interactions as Plotted on the Educational Attitudinal Synthetic Plane Placement Instrument

The Educational Attitudinal Synthetic Plane Placement Instrument consists of eight octants, four linear and horizontal lines, and four diagonal lines. The accompanying mathematical algorithms developed distributes plots on the graph including the progressive or traditional subscale scores indicative of each respondent's identification of another respondent.

This section explains the responses of selected teachers and students concerning the identified problems of grades and attendance.

Frequency of selections by those participants who chose other participants to match the established problems is represented by Tables III to VIII. These tables show a quadrant by quadrant tabulation of selections by participants. The quadrants in this case (Figure III) represent all the possible progressive to progressive choices and likewise all traditional to traditional choices. A quadrant includes two octants; therefore, quadrant I includes octants 2, 3; quadrant II includes octants 1, 8; quadrant III includes octants 6, 7; and, quadrant IV includes octants 4, 5.

Figure III

Octants Included Within Quadrants for Frequency Count

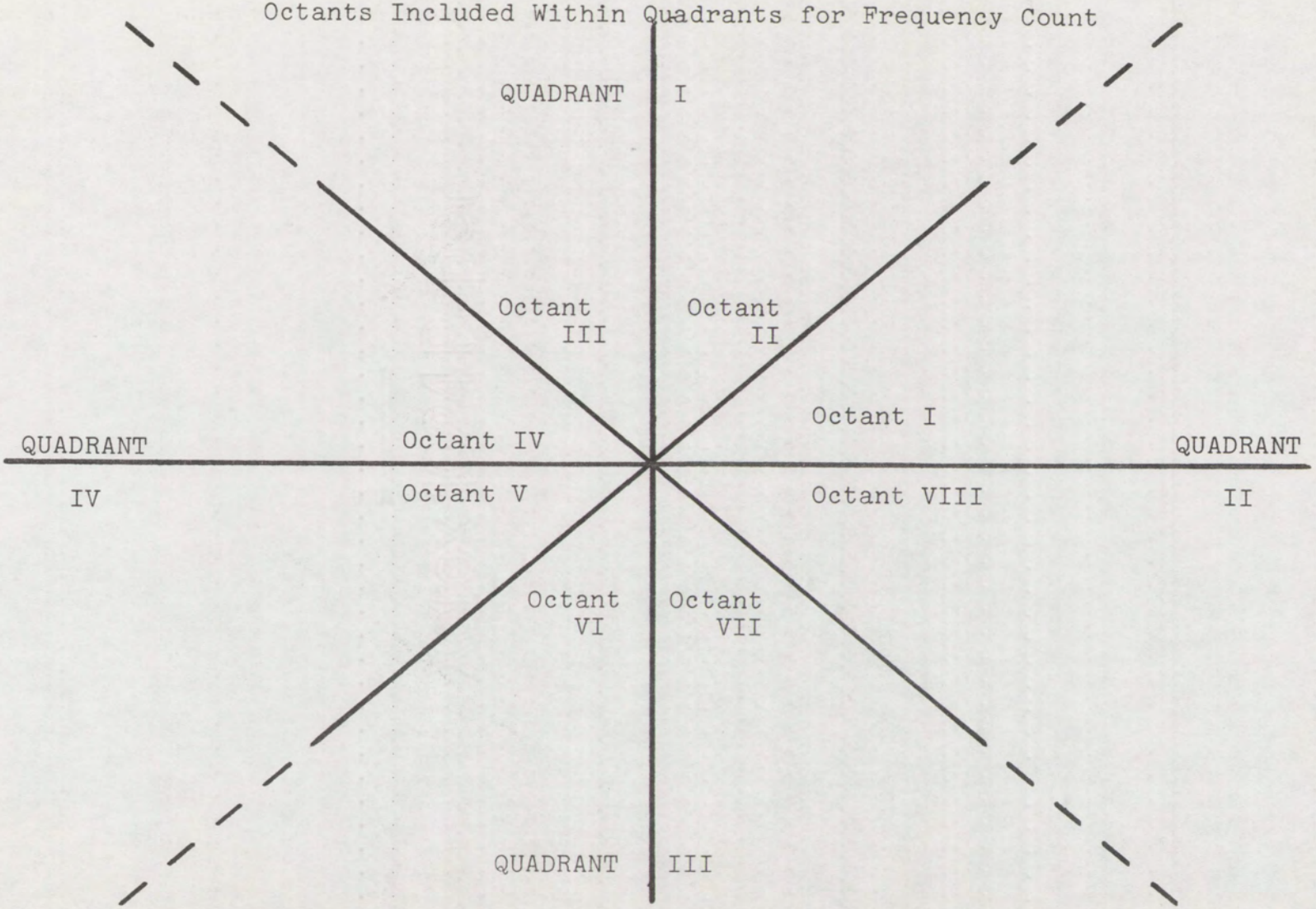


Table II exhibits the reason for including the above octants within specified quadrants. The progressive identifiers who selected identified progressives fall into Quadrant I, the progressive identifiers who selected traditionals fall into Quadrant II; the traditional identifiers who identified traditionals fall into Quadrant III; and, the traditional identifiers who selected progressives fall into Quadrant IV.

Tables IX to XIV include the total tabulations from the computer print out sheets (Appendices IV to IX) concerning student to teacher choices and teacher to student choices. These tables include problem one, two, and both problem totals for both students and teachers.

To classify more precisely the attitudinal interactions of the identified and identifier plots on the graphs, Tables IX to XIV include these interactions. The octants into which these interactions fall, the vertical, horizontal and diagonal lines upon which the interactions fall, plus the classification of selecting student and teacher are all included within the tables. Tables IX through XI include student to teacher choices, and Tables XII through XIV include teacher to student choices.

Table II

Identifier and Identified Frequency Schematic

		IDENTIFIED PARTICIPANTS	
		PROGRESSIVE	TRADITIONAL
IDENTIFIER PARTICIPANTS	PROGRESSIVE	QUADRANT I	QUADRANT II
	TRADITIONAL	QUADRANT IV	QUADRANT III

Matching this table with Figure III will aid the reader in comprehending the source of selected progressive and traditional participants for classification.

Table III

Identifying Students to Identified Teacher Frequency

Count: Theme One - Attendance

		IDENTIFIED TEACHER	
		PROGRESSIVE	TRADITIONAL
IDENTIFYING STUDENT	PROGRESSIVE	19	12
	TRADITIONAL	6	2

Total = 39

Table IV

Identifying Students to Identified Teacher

Frequency Count: Theme Two - Grades

		IDENTIFIED TEACHER	
		PROGRESSIVE	TRADITIONAL
IDENTIFYING STUDENT	PROGRESSIVE	27	8
	TRADITIONAL	9	0

Total = 44

Table V

Identifying Student to Identified Teacher

Frequency Count: Both Themes

		IDENTIFIED TEACHER	
		PROGRESSIVE	TRADITIONAL
IDENTIFYING STUDENT	PROGRESSIVE	28	8
	TRADITIONAL	9	1

Total = 46

Table VI

Identifying Teacher to Identified Student Frequency

Count: Theme One - Attendance

		IDENTIFIED STUDENT	
		PROGRESSIVE	TRADITIONAL
IDENTIFYING TEACHER	PROGRESSIVE	4	1
	TRADITIONAL	3	1

Total = 9

Table VII

Identifying Teacher to Identified Student

Frequency Count: Theme Two - Grades

		IDENTIFIED STUDENT	
		PROGRESSIVE	TRADITIONAL
IDENTIFYING TEACHER	PROGRESSIVE	3	1
	TRADITIONAL	4	1

Total = 9

Table VIII

Identifying Teacher to Identified Student

Frequency Count: Both Themes

		IDENTIFIED STUDENT	
		PROGRESSIVE	TRADITIONAL
IDENTIFYING TEACHER	PROGRESSIVE	4	1
	TRADITIONAL	3	1

Total = 9

IV. ANALYSIS OF THE DATA

The data associated with the two problems, attendance and grades, seems to support the assumption that grades would be considered more of a variable than attendance.

Examination of Tables IX to XI shows the Data Processing II group the most reactionary of the selected students, and Machine Trades II and Data Processing IV the least reactionary. Furthermore, from the plot locations within the octants, the Data Processing II students were more progressive than traditional (See Appendix II for the principles of classification of octant plots). The Data Processing V group held more progressive attitudes toward grades than attendance which seems to indicate their group feels grades was more of a variable than was attendance. Data Processing IV also had the largest contribution in Octant II theme two indicating their choice of grades the most variable of the two themes. Machine Trades III displayed more traditional than progressive attitudes toward attendance than toward grades.

The teacher and student subscale scores from the Kerlinger-Kaya Progressive-Traditional Educational Scales tend to indicate their educational attitudes concerning selected progressive and traditional topics. A person with a measurable progressive subscale score would be classified as a non contributor, a constant, and would

fall into the null area. Uniting two progressive or traditional respondent's subscale scores outside the null area presents an attitudinal interaction, strong or weak, which appears as a graph plot. Analyzing the graph plots outside the null area allows the investigator latitude to identify high or low intensity interactions from participants; equal contributions of either progressive or traditional attitude or equal intensity or opposite attitudinal emphasis; or, total contribution by one party and none by the other.

Table IX

Problem One: Attendance Part One and Two

Student Selecting Teachers

OCTANT	MACHINE TRADES		DATA PROCESSING			TOTAL
	II	III	II	IV	V	
I		C,E		F	I	4
II			I,X,J	R		4
III			4,5,8,0,B X,R,S,T	C		10
IV			2,6,L,A			4
V	1			P		2
VI	5					1
VII		J				1
VIII					H	1
Horizontal TS-PT						
PS-TT	7,0	D			G	4
Diagonal PS-NT	2		3,1			3
TS-NT						
PT-NS			Y,W,P,7			4
TT-NS						
Vertical PS-PT			9			1
TS-TT						
Totals	5	4	23	4	3	39

TS = Traditional Student
PS = Progressive Student
NS = Neutral Student

TT = Traditional Teacher
PT = Progressive Teacher
NT = Neutral Teacher

Table X

Problem Two: Grades Part One and Two

Student Selecting Teachers

OCTANT	MACHINE TRADES			DATA PROCESSING		TOTAL
	II	III	II	IV	V	
I		C,E,V,7				4
II	0			0	I,J	4
III			1,M,T,U,X, 4,3,5,0,B		K,L,X	13
IV			A			1
V						
VI						
VII						
VIII					G,H	2
Horizontal TS-PT			6	P		2
PS-TT	0	F				2
Vertical PS-PT						
TS-TT						
Diagonal PS-NT	2		9	R		3
TS-NT						
PT-NS			7,W,N,Q	D		5
TT-NS	1		L			1
Totals	3	5	18	4	7	37

TS = Traditional Student
PS = Progressive Student
NS = Neutral Student

TT = Traditional Teacher
PT = Progressive Teacher
NT = Neutral Teacher

Table XI

Problem: Both Student Selecting Teachers

OCTANT	MACHINE TRADES		DATA PROCESSING			TOTAL
	II	III	II	IV	V	
I	7	C,E				3
II			9,0,3	R,0	I,J	7
III			M,N,R,S,U, T,X,B,4,5, 8	C	K,L,X	15
IV			Z,6,Z			3
V				P		1
VI						
VII		J				1
VIII					G,H	2
Horizontal TS-PT						
PS-TT	0	D	L			3
Vertical PS-PT			1			1
TS-TT						
Diagonal PS-NT	2					1
TS-NT						
PT-NS			P,Y,W,7	Q		5
TT-NS						
Totals	3	4	23	5	7	42

TS = Traditional Student
PS = Progressive Student
NS = Neutral Student

TT = Traditional Teacher
PT = Progressive Teacher
NT = Neutral Teacher

Table XII

Teacher Selecting Student Problem One: Attendance

OCTANT	4	7	0	A	B	C	D	E	TOTAL
I		X							1
II						X			
III				X					1
IV									
V							X		1
VI									
VII			X						1
VIII									
Horizontal									
TS-PT									
PS-TT								X	1
Vertical									
PS-PT	X								1
TS-TT									
Diagonal									
PS-NT									
TS-NT									
PT-NS					X				1
TT-NS									
Totals	1	1	1	1	1	1	1	1	7

TS = Traditional Student
PS = Progressive Student
NS = Neutral Student

TT = Traditional Teacher
PT = Progressive Teacher
NT = Neutral Teacher

Table XIII

Teacher Selecting Student Problem Two: Grades

OCTANT	3	5	7	8	0	B	C	D	E	TOTAL
I			X							1
II	X						X			2
III				X						1
IV										
V								X		1
VI										
VII					X					1
VIII										
Horizontal TS-PT										
PS-TT									X	1
Vertical PS-PT										
TS-TT										
Diagonal PS-NT										
TS-NT										
PT-NS		X				X				2
TT-NS										
Totals	1	1	1	1	1	1	1	1	1	9

TS = Traditional Student
PS = Progressive Student
NS = Neutral Student
TT = Traditional Teacher
PT = Progressive Teacher
NT = Neutral Teacher

Table XIV

Teachers Selecting Students Both Problems

OCTANT	3	4	5	7	0	B	C	D	E	TOTAL
I				X						1
II	X						X			2
III										
IV			X			X				2
V								X		1
VI										
VII					X					1
VIII										
Horizontal										
TS-PT									X	1
PS-TT										
Vertical										
PS-PT		X								1
TS-PT										
Diagonal										
PS-NT										
TS-NT										
PT-NS										
TT-NS										
Totals	1	1	1	1	1	1	1	1	1	9

TS = Traditional Student
PS = Progressive Student
NS = Neutral Student
TT = Traditional Teacher
PT = Progressive Teacher
NT = Neutral Teacher

In this study, it appears that the Kerlinger-Kaya Progressive-Traditional Scale subscores of teachers and students were predominately progressive (Table I) with 33 percent progressive for teachers and 60 percent progressive for students. When selections occurred, the attitudinal interaction plots indicated a high degree of variability between and among students and teachers concerning the listed problems, attendance and grades (Tables IX to XIV).

In relation to the problem statements of Chapter I, the data tends to indicate the following:

Statement I. The majority of selected teachers view existing school policy regarding grades and attendance as variables, therefore capable of being changed.

Statement II. The majority of selected teachers see themselves as variables, therefore, capable of influencing change in existing attendance and grading policies but with more emphasis on changing grades than attendance.

Statement III. The majority of selected students view existing school policy regarding grades and attendance variables, therefore capable of being changed.

Statement IV. The majority of selected students see themselves as variables, thus capable of influencing change in existing attendance and grading policies but with more emphasis on changing grades than attendance.

Statement V. The combined scores of the majority of selected teachers and students indicate they perceive themselves as variables capable of influencing change on social policy with more emphasis on altering the grading procedures than the attendance policy. Tables XI and XIV show that fifty-eight percent of the participants with plotted interactions displayed a progressive to progressive selection.

V. DATA EXTRACTIONS HIGHLIGHTING RESULTS OF THE STUDY

A counterclockwise octant by octant review of the graph plots for problem one, two and both problem selections of students to teachers and teacher to student presents pertinent results of this study.

Comparing the plots with Garcia's principles (Appendix II) of classification show that on theme one, Table IX, the majority of plots fell into Octants II and III. Octant II contains plots where a progressive student chose a progressive teacher but the student contributed more progressive intensity than the teacher. Octant III contains plots where progressive students chose progressive teachers but the teachers contributed more progressive intensity than the progressive student. For problem one, attendance, progressive teachers demonstrated more intense progressive attitudes than their identifying

students by a ten to four ratio (Table IX). Also four identified progressive teachers were chosen by four neutral students whose plots were placed on the 45° - 315° diagonal line (Appendix IV).

For problem two, grades, over half the recorded plots fell into Octants II and III identifying progressive to progressive choices, but again progressive identified teachers demonstrated more progressive intensity than their identifying students by a thirteen to four ratio (Table X). Furthermore, five out of the eight Data Processing V group's plots fell into Octants II and III demonstrating their high degree of variability concerning this problem. There was a repeat of five progressive subscale teachers chosen by neutral students. These plots were placed on the 45° - 315° diagonal line (Appendix V).

For problem two, grades, there was no selection of an identified traditional subscale teacher by a traditional subscale student.

Four out of eight teachers who chose students to match problem one held progressive educational attitudes (Table XII). The attitudinal interaction plots of these teachers (A,C,E,4) and students fell in Octants II and III, the Progressive Student-Progressive Teacher vertical line, and the Progressive Teacher neutral student diagonal line of 45° - 315°.

For problem two five out of nine teachers (Table XIII) who held progressive subscale scores chose progressive students. These teachers (3,5,8,B,C) and student plots fell in Octants II, III, and on the Progressive teacher neutral student diagonal line of 45° - 315°.

VI. SUMMARY

This chapter has presented expanded definitions of constant and variable as they relate to problem statements in Chapter I. A constant was defined as the plotted relationship having the absolute value of X and Y scores less than 3.00. Conversely a variable was defined as any X and Y score having the absolute value equal to or greater than 3.00.

The Educational Attitudinal Synthetic Plane Placement Instrument consisting of the Kerlinger-Kaya Progressive-Traditional Educational Scale and accompanying student to teacher and teacher to student problem matchings were described. These instruments provided the data for the study, and this data was numerically digested through a computer program specifically designed for the EASPP.

Listings of student to teacher matchings concerning established problems and classifications of these matchings are located in Tables IX through XI while Tables XII through XIV contain the teacher to student matchings and classifications.

Data extractions were listed to indicate areas of intense attitudinal contributions and the identification of these contributors.

It was found that selected teachers and students viewed the attendance and grading policy as variables. Selected students and teachers also viewed themselves as variables. Indication was given by the respondents' Kerlinger-Kaya Educational Scale subscores that propensity to change grades was greater than was the indication to change the attendance policy.

The identified teachers contributed more attitudinal intensity to change the grading policy and attendance policy than the identifying students.

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CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This chapter contains sections dealing with a summary, conclusions, and recommendations.

I. SUMMARY

This study was designed to measure attitudinal interactions of selected vocational school teachers and students concerning attendance and grades, school policy problems, at the Technical Vocational Institute in Albuquerque, New Mexico.

One instrument, the Educational Attitudinal Synthetic Plane Placement instrument, which consists of two parts--abstract and experiential--was employed to obtain data. Seventy students representing Machine Trades and Data Processing plus fifteen instructors were administered the EASPP. All student testing was done within the classrooms while teachers were unsupervised when they responded to the instrument. The testing of students took one week. Permission was granted by the administration and cooperating teachers to obtain data for this research.

All statistical diagnosis was completed through a program developed by John P. Grillo, a co-developer of

the EASPP. The data results were plotted on graphs and interpreted according to principles established by Felix Garcia Jr., the originator of the EASPP instrument.

II. CONCLUSIONS

This study, designed to measure attitudinal interactions, gathered results from participants concerning two problems, attendance and grades. It was found that the majority of teachers and students held progressive subscale scores as measured by the Kerlinger-Kaya Traditional Progressive Educational Scale.

Moreover, when students selected teachers and teachers selected students to match established problems on the opinionnaire, the combination of scores were predominately progressive and were shown as graph plots. These plots seemed to indicate the majority of respondents considered themselves as variables and the established problems as variables as well. It appears that these groups, teachers and students, have indicated their propensity to change the Technical Vocational Institute policies for grading and attendance. Grades was considered more a variable than attendance was considered a variable.

The Data Processing II and V groups were found to be the most reactionary and variable, and the Machine Trades III was the least variable. When students chose

teachers to match established problems, it was found that teachers contributed more progressive attitudinal intensity for changing grades and attendance than was exhibited by selecting students.

III. RECOMMENDATIONS

The following recommendations seem viable when considering the study results:

1. A climate should be provided for evaluation and feedback in not only the Technical Vocational Institute but other educational institutions where staffs and students are affected by arbitrary policy decisions.

2. This instrument should be used to further probe the attitudes of other student bodies and staffs on other issues of interest to the participants.

3. Study should be done on the importance and implications of clusters of graph plots recording the attitudinal interactions of participants.

4. Additional studies should be done concerning controversial problems pertinent to modern education.

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APPENDICES

APPENDIX I

Name _____

Date _____

Major

___ Data Processing
___ Machine Trades

Directions:

Read the following questions and select an answer which you feel is the best answer for each question:

I disagree completely	I disagree strongly	I disagree partially	I have no opinion	I agree partially
1	2	3	4	5

I agree strongly	I agree completely
6	7

1. The goals of education should be dictated by the children's interests and needs, as well as by the larger demands of society. 1 2 3 4 5 6 7

2. No subject is more important than the personalities of the pupils. 1 2 3 4 5 6 7

3. Schools of today are neglecting the three R's. 1 2 3 4 5 6 7

4. The pupil-teacher relationship is the relationship between a child who needs direction, guidance, and control and a teacher who is an expert supplying direction, guidance and control 1 2 3 4 5 6 7

5. Teachers, like university professors, should have academic freedom--freedom to teach what they think is right and best. 1 2 3 4 5 6 7

6. The backbone of the school's course of studies is the subject matter; activities are useful mainly to make an easier task of learning the subject matter. 1 2 3 4 5 6 7

I disagree completely	I disagree strongly	I disagree partially	I have No opinion	I agree partially
1	2	3	4	5

I agree strongly	I agree completely
6	7

7. Teachers should encourage pupils to study and criticize our own and other economic systems and practices. 1 2 3 4 5 6 7

8. The traditional moral standards of our culture should not just be accepted; they should be examined and tested in solving the present problems of students. 1 2 3 4 5 6 7

9. Learning is experimental; the child should be taught to test many possible choices before accepting them. 1 2 3 4 5 6 7

10. The course of studies consists of subject matter to be learned and skills to be acquired. 1 2 3 4 5 6 7

11. The true view of education is arranging learning so that the child gradually builds up a storehouse of knowledge that he can use in the future. 1 2 3 4 5 6 7

12. One of the big difficulties with modern schools is that discipline is often sacrificed to the interests of the children. 1 2 3 4 5 6 7

13. The course of studies should contain an orderly arrangement of subjects that represent the best of our cultural heritage. 1 2 3 4 5 6 7

14. Discipline should be governed by long-range interests and well established standards. 1 2 3 4 5 6 7

I disagree completely	I disagree strongly	I disagree partially	I have No opinion	I agree partially	I agree strongly	I agree completely
1	2	3	4	5	6	7

15. Education and educational institutions must be sources of new social ideas; education must be a social program undergoing continual reconstruction. 1 2 3 4 5 6 7

16. Right from the first grade, teachers must teach the child at his own level and not at the level of the grade he is in. 1 2 3 4 5 6 7

17. Children need and should have more supervision and discipline than they usually get. 1 2 3 4 5 6 7

18. Children should be allowed more freedom than they usually get in the execution of learning activities. 1 2 3 4 5 6 7

19. Learning is essentially a process of increasing one's store of knowledge of information about the various fields of knowledge. 1 2 3 4 5 6 7

20. In a democracy, teachers should help students understand not only the meaning of democracy but also the meaning of the theories of other political systems. 1 2 3 4 5 6 7

Identify a (student) (teacher) whom you think most closely represents the point of view included in the following paragraphs. Identify a (student) (teacher) for each paragraph.

I. ATTENDANCE

Attendance is important because when a student is not present in the classroom he cannot learn the presented material. Attendance is also important because a student's attendance records are often made known to his future employer. An additional reason for attendance is that future employers can judge the student's attendance on the job from his classroom attendance.

The name of the (student) (teacher) I think best represents this point of view is _____.

II. GRADES

Grades are important for the following reasons: 1. Grades are a good indication of a student's ability. 2. Grades are a good record of a student's ability. 3. Grades can separate the unsatisfactory student from the satisfactory student. 4. Grades are a reward for competition among students.

The name of the (student) (teacher) I think best represents this point of view is _____.

APPENDIX II

Functional Description of Educational Attitudinal Contributory Amounts in the EASPP Octants

These principles show the Progressivism Subscale or Traditionalism Subscale educational attitudinal modes of action by means of contributory amounts made by a student and his identified portion of the faculty in an interaction. The terms used to describe these modes of action are: (1) diminishing, (2) increasing, (3) more, and (4) less. Reading the EASPP counterclockwise, the octants are described from the students' point of view in the first eight and from the identified portions of the faculty in the last eight principles.

Principle #1. If a student's Progressivism Subscale contributory amount is increasing and at the same time, his contributory amount is more than his identified Traditionalism Subscale portion of the faculty in the interaction, then that interaction is plotted Octant I.

Principle #2. If a student's Progressivism Subscale contributory amount is diminishing but at the same time, his contributory amount is more than his identified Progressivism Subscale portion of the faculty, then that interaction is plotted in Octant II.

Principle #3. If a student's Progressivism Subscale contributory amount is diminishing and at the same time, his contributory amount is less than his identified

Progressivism Subscale portion of the faculty in the interaction, then that interaction is plotted in Octant III.

Principle #4. If a student's Traditionalism Subscale contributory amount is increasing but at the same time, his contributory amount is less than his identified Progressivism Subscale portion of the faculty in the interaction, then that interaction is plotted in Octant IV.

Principle #5. If a student's Traditionalism Subscale contributory amount is increasing and at the same time his contributory amount is more than his identified Progressivism Subscale portion of the faculty in the interaction, then that interaction is plotted in Octant V.

Principle #6. If a student's Traditionalism Subscale contributory amount is diminishing but at the same time his contributory amount is more than his identified Traditionalism Subscale portion of the faculty in the interaction, then that interaction is plotted in Octant VI.

Principle #7. If a student's Traditionalism Subscale contributory amount is diminishing and at the same time his contributory amount is less than his identified Traditionalism Subscale portion of the faculty in the interaction, then that interaction is plotted in Octant VII.

Principle #8. If a student's Progressivism Subscale contributory amount is increasing but at the same time his contributory amount is less than his identified Traditionalism Subscale in the interaction, then that interaction is plotted in Octant VIII.

Principle #9. If an identified Traditionalism Subscale portion of the faculty's contributory amount is diminishing and at the same time their contributory amount is less than the Progressivism Subscale student in the interaction, then that interaction is plotted in Octant I.

Principle #10. If an identified Progressivism Subscale portion of the faculty's contributory amount is increasing and at the same time their contributory amount is more than the Progressivism Subscale student in the interaction, then that interaction is plotted in Octant II.

Principle #11. If an identified Progressivism Subscale portion of the faculty's contributory amount is increasing and at the same time their contributory amount is more than the Progressivism Subscale student in the interaction, then that interaction is plotted in Octant III.

Principle #12. If an identified Progressivism Subscale portion of the faculty's contributory amount is diminishing but at the same time their contributory amount

is more than the Traditionalism Subscale student in the interaction, then that interaction is plotted in Octant IV.

Principle #13. If an identified Progressivism Subscale portion of the faculty's contributory amount is diminishing and at the same time their contributory amount is less than the Traditionalism Subscale student, then that interaction is plotted in Octant V.

Principle #14. If an identified Traditionalism Subscale portion of the faculty's contributory amount is increasing but at the same time their contributory amount is less than the Traditionalism Subscale student, then that interaction is plotted in Octant VI.

Principle #15. If an identified Traditionalism Subscale portion of the faculty's contributory amount is increasing and at the same time their contributory amount is more than the Traditionalism Subscale student, then that interaction is plotted in Octant VII.

Principle #16. If an identified Traditionalism Subscale portion of the faculty's contributory amount is diminishing but at the same time their contributory amount is more than the Traditionalism Subscale student, then that interaction is plotted in Octant VIII.

APPENDIX III

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                    DIVERT FROM TERMINAL 16

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/INPUT.0001 /ID 312345042,EF699,        GRILLO, JOHN P.
FELIX1.0001 /FILE DISK=(01,NREC=1000),RSIZ=080
FELIX1.0002 /JOB TIME=02,GO
FELIX1.0003 /FTC LIST
FELIX1.0004 C
FELIX1.0005 C  FORTRAN PROGRAM TO CALCULATE AND PLOT EDUCATIONAL ATTITUDINAL LINEAR
FELIX1.0006 C                  AND SPATIAL PLACEMENT DATA
FELIX1.0007 C
FELIX1.0008 C  JOHN P. GRILLO      AUGUST 15, 1970
FELIX1.0009 C
FELIX1.0010 C  USE OF THIS PROGRAM WITHOUT EXPRESSED CONSENT OF EITHER/OR
FELIX1.0011 C
FELIX1.0012 C  FELIX GARCIA, JR.  10909 4TH. ST., N.W.  ALBUQUERQUE, NEW MEXICO
FELIX1.0013 C  JOHN P. GRILLO   1321 GLORIETA ST., N. E. ALBUQUERQUE, NEW MEXICO
FELIX1.0014 C
FELIX1.0015 C  IS STRICTLY FORBIDDEN.
FELIX1.0016 C
FELIX1.0017 C  SPECIAL CHARACTERISTICS
FELIX1.0018 C  1.  SCRATCH DISK FILE (1) NECESSARY
FELIX1.0019 C  2.  WRITTEN WITH EXECUTION-TIME FORMATTING
FELIX1.0020 C
FELIX1.0021 C  DATA DECK STRUCTURE
FELIX1.0022 C
FELIX1.0023 C  1.  . XEOF 1234567890ABCDEFGHIJKLMNOPQRSTUVWXYZ$+()-*&/,
FELIX1.0024 C  2.  NUMBER OF THEMES (I2)
FELIX1.0025 C  3.  JURY LOADINGS, 1 PER THEME (8F5.0)
FELIX1.0026 C  5.  TITLE (20A4)
FELIX1.0027 C  6.  DATA CARDS, 2 MEDIANS FOR STUDENT, 2 MEDIANS FOR EACH THEME.
FELIX1.0028 C     NOTE .. C/C 1-4 MUST CONTAIN ID INFORMATION.
FELIX1.0029 C  7.  TERMINATOR CARD (EOF IN C/C 1-3, BLANK IN C/C 4)
FELIX1.0030 C
FELIX1.0031 C
FELIX1.0032        DIMENSION ALOAD(8),V(50),X(50),FMT(20),CARD(20),TITLE(20),
FELIX1.0033       1 SYM(50), XID(50)
FELIX1.0034        COMMON X, V, DOT, BLK, EX, SYM, N
FELIX1.0035        REAL MED(50,18)
FELIX1.0036 C
FELIX1.0037 C  READ IN NECESSARY SYMBOLS
FELIX1.0038 C
FELIX1.0039        READ(5,498) DOT, BLK, EX, EOF, SYM
FELIX1.0040 C
FELIX1.0041 C  READ NT  .. = NUMBER OF THEMES
FELIX1.0042 C
FELIX1.0043        READ (5,497) NT
FELIX1.0044  1000 N = 0
FELIX1.0045        STK = 0.0
FELIX1.0046 C
FELIX1.0047   496 FORMAT (1X, 20A4,/)
FELIX1.0048   497 FORMAT (I2)
FELIX1.0049   498 FORMAT (3A1, A4, 50A1)
FELIX1.0050   501 FORMAT (8F5.0)
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FELIX1.0051    499 FORMAT (20A4)
FELIX1.0052    599 FORMAT (1X, 20A4)
FELIX1.0053    597 FORMAT (1H1, 20A4,//)
FELIX1.0054    603 FORMAT (1X, 20A4, 5X, A1)
FELIX1.0055    606 FORMAT (1X, A4, 2X, A1, 2X, 18F5.1)
FELIX1.0056    601 FORMAT ('0  STUDENT COUNT = ', I2, /, '0  JURY CONSTANT = ',
FELIX1.0057       1 F8.4, /, '0  FACTOR LOADINGS = ', 8F10.2)
FELIX1.0058    605 FORMAT (///, 22X, 'ID  STUDENT   TEACHER    HORIZONTAL     V',
FELIX1.0059       1 'ERTICAL   SYMBOL', /)
FELIX1.0060    602 FORMAT (20X, A4, F8.1, F10.1, F12.3, F15.3, 4X, A1)
FELIX1.0061 C
FELIX1.0062 C
FELIX1.0063 C  READ IN THEME JURY LOADINGS
FELIX1.0064 C
FELIX1.0065       READ (5,501) (ALOAD(I), I = 1,NT)
FELIX1.0066 C
FELIX1.0067 C  READ AND WRITE TITLE AND FORMAT CARDS
FELIX1.0068 C
FELIX1.0069       READ (5,499) FMT
FELIX1.0070       READ (5,499) TITLE
FELIX1.0071       WRITE (6,597) TITLE
FELIX1.0072       WRITE (6,496) FMT
FELIX1.0073 C
FELIX1.0074 C  READ AND WRITE DATA CARD, CHECK FOR LAST CARD
FELIX1.0075 C
FELIX1.0076     5 READ (5,499) CARD
FELIX1.0077       IF (CARD(1) - EOF) 10,15,10
FELIX1.0078 C
FELIX1.0079 C  WRITE DATA CARD ON SCRATCH DISK FILE
FELIX1.0080 C
FELIX1.0081    10 WRITE (1,499) CARD
FELIX1.0082       N = N + 1
FELIX1.0083       WRITE (6,603) CARD, SYM(N)
FELIX1.0084 C
FELIX1.0085 C  READ ID INFORMATION FROM C/C 1-4 OF DATA CARD
FELIX1.0086 C
FELIX1.0087       XID(N) = CARD(1)
FELIX1.0088       GO TO 5
FELIX1.0089    15 REWIND 1
FELIX1.0090 C
FELIX1.0091 C  NMED IS NO. OF MEDIANS = 2 PER STUDENT + TWICE THE NUMBER OF THEMES
FELIX1.0092 C
FELIX1.0093       NMED = 2 + 2 * NT
FELIX1.0094       WRITE (6,597) TITLE
FELIX1.0095       DO 20 M = 1,N
FELIX1.0096 C
FELIX1.0097 C  MED IS ARRAY HOLDING MEDIANS
FELIX1.0098 C
FELIX1.0099       READ (1,FMT) (MED(M,I), I = 1,NMED)
FELIX1.0100 C
FELIX1.0101 C  REWRITE DATA CARDS, EACH WITH ITS OWN SYMBOL
FELIX1.0102 C
FELIX1.0103    20 WRITE (6,606) XID(M), SYM(M), (MED(M,I), I = 1,NMED)
FELIX1.0104 C
FELIX1.0105 C  STK = JURY CONSTANT
FELIX1.0106 C
FELIX1.0107       DO 30 I = 1,NT
```

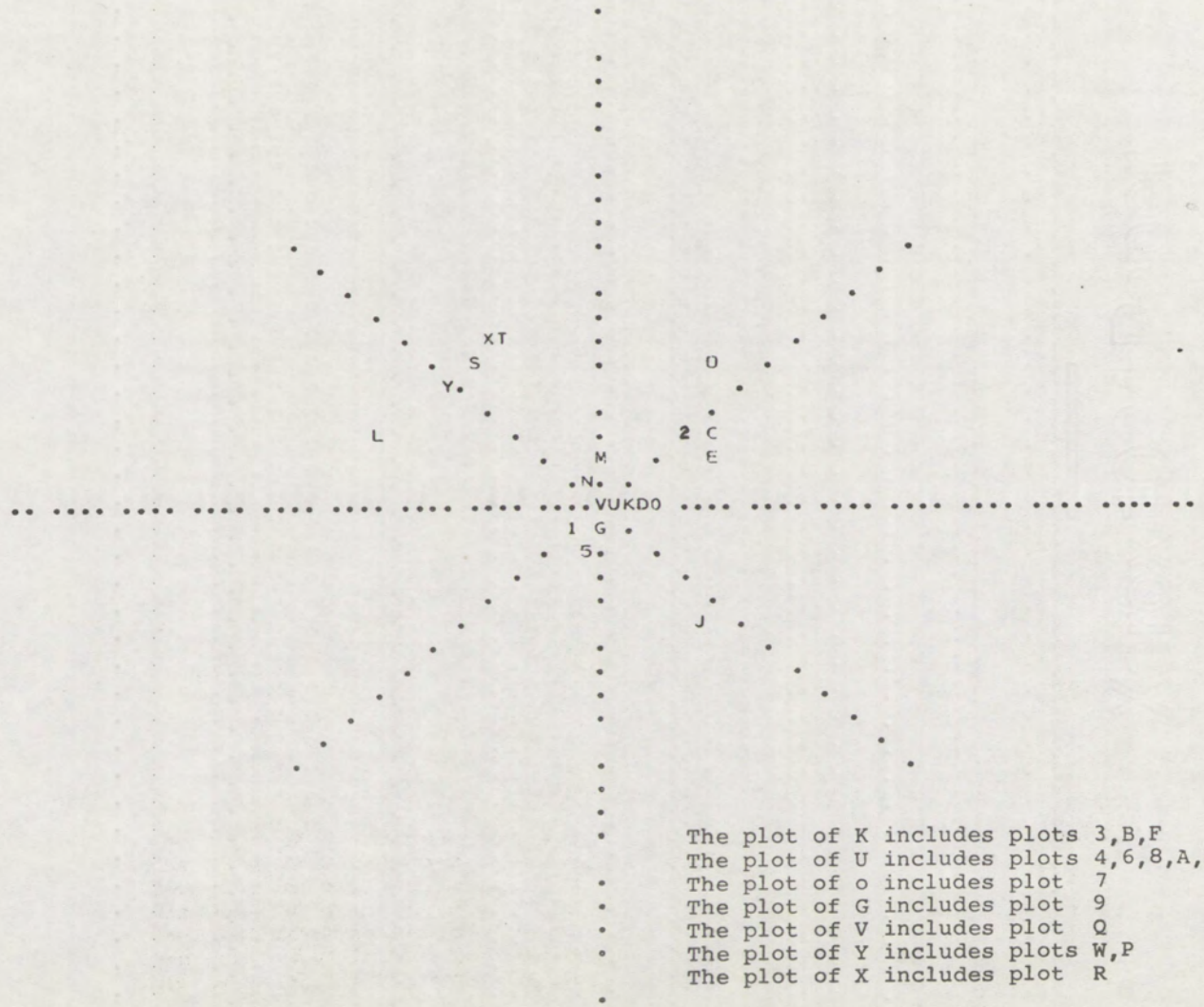
```
FELIX1.0108     30 STK = STK + ALOAD(I) * ALOAD(I)
FELIX1.0109 C
FELIX1.0110 C   INITIALIZE PAGE
FELIX1.0111 C
FELIX1.0112        WRITE (6,597) TITLE
FELIX1.0113        WRITE (6,601) N, STK, (ALOAD(I), I = 1,NT)
FELIX1.0114        WRITE (6,605)
FELIX1.0115 C
FELIX1.0116 C   FIND STUDENT'S SCORE ... F I R S T   A L G O R I T H M
FELIX1.0117 C
FELIX1.0118        DO 400 M = 1,N
FELIX1.0119        ST =       SCORE (MED(M,1), MED(M,2))
FELIX1.0120        T = 0.
FELIX1.0121 C
FELIX1.0122 C   FIND TEACHER'S SCORE ... S E C O N D   A L G O R I T H M
FELIX1.0123 C
FELIX1.0124        DO 40 L = 1,NT
FELIX1.0125     40 T=T+ALOAD(L)**2  * SCORE (MED(M,2*L+1),MED(M,2*L+2))
FELIX1.0126        T = T / STK
FELIX1.0127 C
FELIX1.0128 C   FIND HORIZONTAL DISPLACEMENT ... T H I R D   A L G O R I T H M
FELIX1.0129 C
FELIX1.0130        X(M) = (ST - T) / 2.0
FELIX1.0131 C
FELIX1.0132 C   FIND VERTICAL DISPLACEMENT ... F O U R T H   A L G O R I T H M
FELIX1.0133 C
FELIX1.0134        V(M) = (ST + T) / 4.0
FELIX1.0135 C
FELIX1.0136 C   WRITE CHART OF COMPUTED VALUES
FELIX1.0137 C
FELIX1.0138    400 WRITE (6,602) XID(M), ST, T, X(M), V(M), SYM(M)
FELIX1.0139 C
FELIX1.0140 C   TITLE THE PLOT AND CALL THE PLOTTING SUBROUTINE
FELIX1.0141 C
FELIX1.0142        WRITE (6,597) TITLE
FELIX1.0143        CALL GRAPH
FELIX1.0144        CALL EXIT
FELIX1.0145        END
```

```
FELIX1.0146        FUNCTION SCORE (P,T)
FELIX1.0147 C
FELIX1.0148 C  P IS FIRST  MEDIAN VALUE (PROGRESSIVE)
FELIX1.0149 C  T IS SECOND MEDIAN VALUE (TRADITIONAL)
FELIX1.0150 C
FELIX1.0151        IF (P-T) 10,30,20
FELIX1.0152     10 SCORE = P * T - T * T
FELIX1.0153        RETURN
FELIX1.0154     20 SCORE = P * P - P * T
FELIX1.0155        RETURN
FELIX1.0156     30 SCORE = 0.
FELIX1.0157        RETURN
FELIX1.0158        END
```

```
FELIX1.0159          SUBROUTINE GRAPH
FELIX1.0160          COMMON X(50), V(50), DOT, BLK, EX, SYM(50), N
FELIX1.0161          DIMENSION PLOT(111,51)
FELIX1.0162 C   BLANK OUT ARRAY
FELIX1.0163          DO 1 I = 1,111
FELIX1.0164          DO 1 J = 1,51
FELIX1.0165        1 PLOT(I,J) = BLK
FELIX1.0166 C   TOP-LEFT TO BOTTOM-RIGHT DIAGONAL
FELIX1.0167          DO 11 I = 14,98,2
FELIX1.0168          DO 11 J = 15,37
FELIX1.0169          L = I - 4 - 2 * J
FELIX1.0170          IF (L) 11,15,11
FELIX1.0171       15 PLOT (I,J) = DOT
FELIX1.0172       11 CONTINUE
FELIX1.0173 C   TOP-RIGHT TO BOTTOM-LEFT DIAGONAL
FELIX1.0174          DO 5 I = 14,98,2
FELIX1.0175          K = 112 - I
FELIX1.0176          DO 5 J = 15,37
FELIX1.0177          L = I - 4 - J * 2
FELIX1.0178          IF (L) 5,4,5
FELIX1.0179        4 PLOT (K,J) = DOT
FELIX1.0180        5 CONTINUE
FELIX1.0181 C   HORIZONTAL AXIS
FELIX1.0182          DO 2 I = 14,98
FELIX1.0183        2 PLOT(I,26) = DOT
FELIX1.0184 C   EVERY 5TH. HORIZONTAL IS BLANK
FELIX1.0185          DO 25 I = 11,101,5
FELIX1.0186       25 PLOT(I,26) = BLK
FELIX1.0187 C   VERTICAL AXIS
FELIX1.0188          DO 3 J = 5,47
FELIX1.0189        3 PLOT(56,J) = DOT
FELIX1.0190 C   EVERY 5TH. VERTICAL IS BLANK
FELIX1.0191          DO 35 J = 6,46,5
FELIX1.0192       35 PLOT(56,J) = BLK
FELIX1.0193 C   CALCULATE HORIZONTAL POSITION.  NOTE CORRECTION FOR INTEGER ROUNDING
FELIX1.0194          DO 10 M = 1,N
FELIX1.0195          IF (X(M)) 37,36,36
FELIX1.0196       37 IX = X(M) + 57.
FELIX1.0197          GO TO 38
FELIX1.0198       36 IX = X(M) + 56.
FELIX1.0199 C   CALCULATE VERTICAL POSITION, CORRECT FOR INTEGER ROUNDING
FELIX1.0200       38 IF (V(M)) 39,40,40
FELIX1.0201       39 IV = V(M) + 27
FELIX1.0202          GO TO 10
FELIX1.0203       40 IV = V(M) + 26.
FELIX1.0204 C   PLOT POSITION = SYMBOL ASSIGNED TO THAT STUDENT
FELIX1.0205       10 PLOT (IX,IV) = SYM(M)
FELIX1.0206          K = 52
FELIX1.0207          DO 20 J = 1,51
FELIX1.0208          K = K - 1
FELIX1.0209 C   WRITE OUT THE PLOT
FELIX1.0210          WRITE (6,600) (PLOT(I,K), I = 1,111)
FELIX1.0211       20 CONTINUE
FELIX1.0212      600 FORMAT (5X, 111A1)
FELIX1.0213          RETURN
FELIX1.0214          END
```

APPENDIX IV

STUDENTS TO THEIR TEACHERS, PART 1 (FIRST THEME)



The plot of K includes plots 3,B,F
The plot of U includes plots 4,6,8,A,H,I
The plot of o includes plot 7
The plot of G includes plot 9
The plot of V includes plot Q
The plot of Y includes plots W,P
The plot of X includes plot R

STUDENTS TO THEIR TEACHERS, PART 1 (FIRST THEME)

STUDENT COUNT = 35

JURY CONSTANT = 1.0000

FACTOR LOADINGS = 1.00

ID	STUDENT	TEACHER	HORIZONTAL	VERTICAL	SYMBOL
1	-5.0	0.0	-2.500	-1.250	1
2	12.0	0.0	6.000	3.000	2
3	2.8	-3.0	2.875	-0.063	3
4	0.0	-3.0	1.500	-0.750	4
5	-5.5	-3.0	-1.750	-2.375	5
6	0.0	-3.0	1.500	-0.750	6
7	6.5	-3.0	4.750	0.875	7
8	0.0	-3.0	1.500	-0.750	8
9	-2.8	-3.0	0.125	-1.438	9
10	6.0	-2.8	4.375	0.813	0
11	0.0	-2.8	1.375	-0.688	A
12	2.5	-2.8	2.625	-0.063	B
13	15.0	-2.8	8.875	3.063	C
14	3.5	-2.8	3.125	0.188	D
15	14.0	-2.8	8.375	2.813	E
16	3.0	-2.8	2.875	0.063	F
17	-2.8	-2.8	0.000	-1.375	G
18	0.0	-2.8	1.375	-0.688	H
19	0.0	-2.8	1.375	-0.688	I
20	-2.5	-18.0	7.750	-5.125	J
21	2.5	-3.0	2.750	-0.125	K
22	-10.0	22.8	-16.375	3.188	L
23	5.0	5.0	0.000	2.500	M
24	2.8	5.0	-1.125	1.938	N
25	21.0	5.0	8.000	6.500	O
26	0.0	22.8	-11.375	5.688	P
27	0.0	0.0	0.000	0.000	Q
28	6.0	22.8	-8.375	7.188	R
29	3.0	22.8	-9.875	6.438	S
30	7.0	22.8	-7.875	7.438	T
31	3.0	0.0	1.500	0.750	U
32	0.0	0.0	0.000	0.000	V
33	0.0	22.8	-11.375	5.688	W
34	6.0	22.8	-8.375	7.188	X
35	0.0	22.8	-11.375	5.688	Y

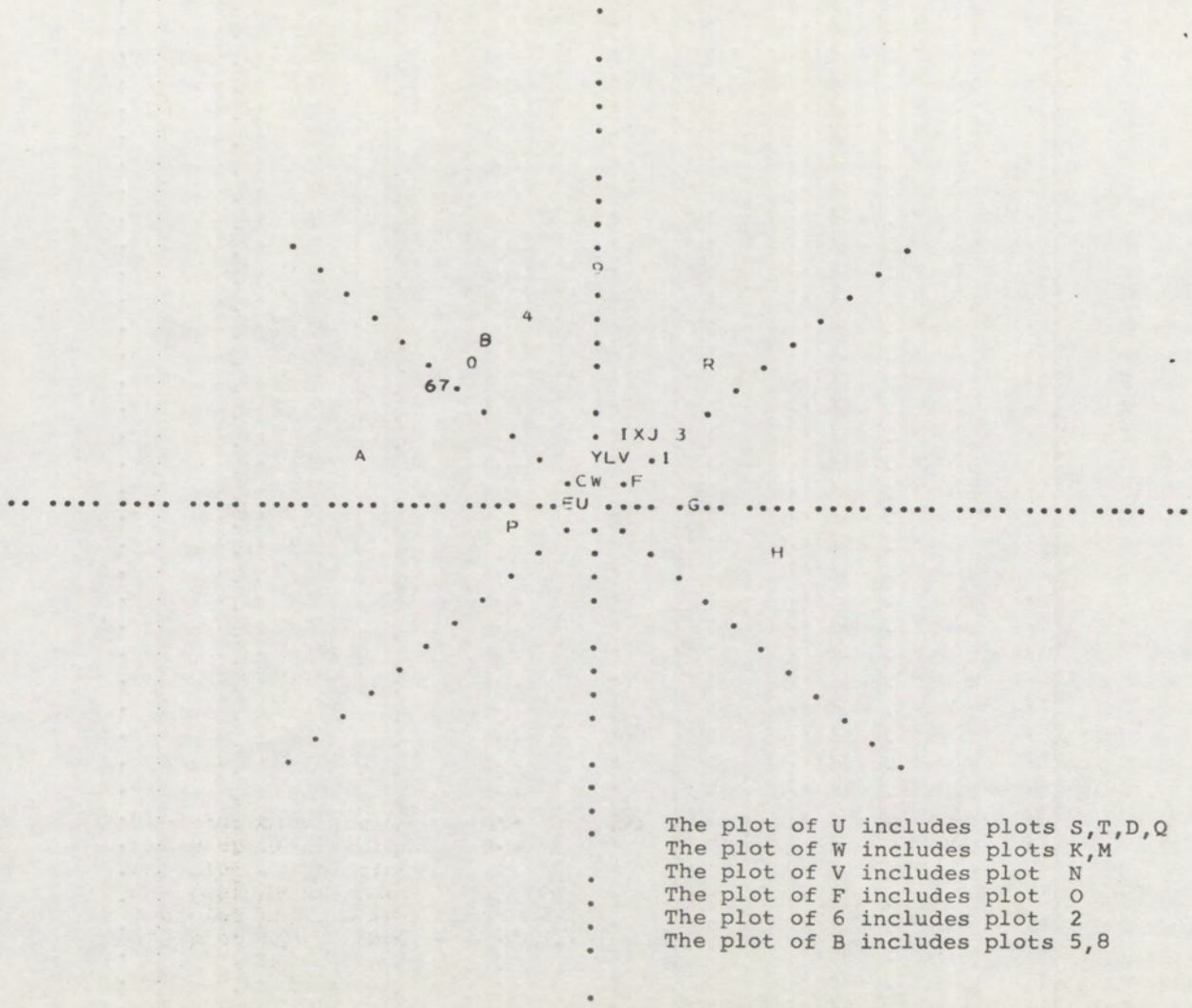
STUDENTS TO THEIR TEACHERS, PART 1 (FIRST THEME)

(4X,2(F4.0,F3.0))

1	4.05.0	7.07.0	7.07.0	I	I
2	6.04.0	7.07.0	7.07.0	I	I
3	5.55.0	5.56.0	7.07.0	K	I
4	6.06.0	5.56.0	5.56.0	K	K
5	5.56.5	5.56.0	5.56.0	K	K
6	7.07.0	5.56.0	5.56.0	K	K
7	6.55.5	5.56.0	7.07.0	K	I
8	6.06.0	5.56.0	5.56.0	K	K
9	5.05.5	5.56.0	5.56.0	K	K
10	6.05.0	5.05.5	5.05.5	J	J
11	4.54.5	5.05.5	5.05.5	J	J
12	5.04.5	5.05.5	5.05.5	J	J
13	6.03.5	5.05.5	5.05.5	J	J
14	7.06.5	5.05.5	5.56.0	J	K
15	7.05.0	5.05.5	5.56.0	J	K
16	6.05.5	5.05.5	5.56.0	J	K
17	5.05.5	5.05.5	5.56.0	J	K
18	5.05.0	5.05.5	5.56.0	J	K
19	6.06.0	5.05.5	5.56.0	J	K
20	4.55.0	3.06.0	5.05.5	P	J
21	5.04.5	5.56.0	5.56.0	K	K
22	4.05.0	6.53.0	5.05.0	D	F
23	5.04.0	5.04.0	6.53.0	C	D
24	5.55.0	5.04.0	6.53.0	C	D
25	7.04.0	5.04.0	6.05.0	C	E
26	5.05.0	6.53.0	5.05.0	D	F
27	5.55.5	5.05.0	6.05.0	F	E
28	6.05.0	6.53.0	5.04.0	D	C
29	6.05.5	6.53.0	5.05.0	D	F
30	7.06.0	6.53.0	6.53.0	D	D
31	6.05.5	5.05.0	6.53.0	F	D
32	5.05.0	5.05.0	5.05.0	G	F
33	5.05.0	6.53.0	6.53.0	D	D
34	6.05.0	6.53.0	6.53.0	D	D
35	5.05.0	6.53.0	5.05.0	D	F

1 2 3 4 5 6 7 8 9 0 A B C D E F G H I J K L M N O P Q R S T U V W X Y

STUDENTS TO THEIR TEACHERS, PART 2 (FIRST THEME)



The plot of U includes plots S,T,D,Q
The plot of W includes plots K,M
The plot of V includes plot N
The plot of F includes plot O
The plot of 6 includes plot 2
The plot of B includes plots 5,8

STUDENTS TO THEIR TEACHERS, PART 2 (FIRST THEME)

STUDENT COUNT = 35

JURY CONSTANT = 1.0000

FACTOR LOADINGS = 1.00

ID	STUDENT	TEACHER	HORIZONTAL	VERTICAL	SYMBOL
36	11.0	0.0	5.500	2.750	1
37	-2.8	22.8	-12.750	5.000	2
38	13.8	0.0	6.875	3.438	3
39	12.0	22.8	-5.375	8.688	4
40	6.5	22.8	-8.125	7.313	5
41	-2.8	22.8	-12.750	5.000	6
42	0.0	22.8	-11.375	5.688	7
43	6.0	22.8	-8.375	7.188	8
44	21.0	22.8	-0.875	10.938	9
45	3.3	22.8	-9.750	6.500	0
46	-12.0	22.8	-17.375	2.688	A
47	6.0	22.8	-8.375	7.188	B
48	2.8	5.0	-1.125	1.938	C
49	0.0	2.8	-1.375	0.688	D
50	-2.8	2.8	-2.750	0.000	E
51	6.0	0.0	3.000	1.500	F
52	6.0	-9.0	7.500	-0.750	G
53	9.0	-18.0	13.500	-2.250	H
54	10.5	5.0	2.750	3.875	I
55	11.0	2.8	4.125	3.438	J
56	2.8	2.8	0.000	1.375	K
57	6.0	2.8	1.625	2.188	L
58	3.0	2.8	0.125	1.438	M
59	7.0	2.5	2.250	2.375	N
60	8.3	2.8	2.750	2.750	O
61	-9.8	2.8	-6.250	-1.750	P
62	0.0	2.8	-1.375	0.688	Q
63	22.8	5.0	8.875	6.938	R
64	0.0	2.8	-1.375	0.688	S
65	0.0	2.8	-1.375	0.688	T
66	0.0	2.8	-1.375	0.688	U
67	7.0	2.8	2.125	2.438	V
68	2.8	2.8	0.000	1.375	W
69	10.5	2.8	3.875	3.313	X
70	5.5	5.0	0.250	2.625	Y

STUDENTS TO THEIR TEACHERS, PART 2 (FIRST THEME)

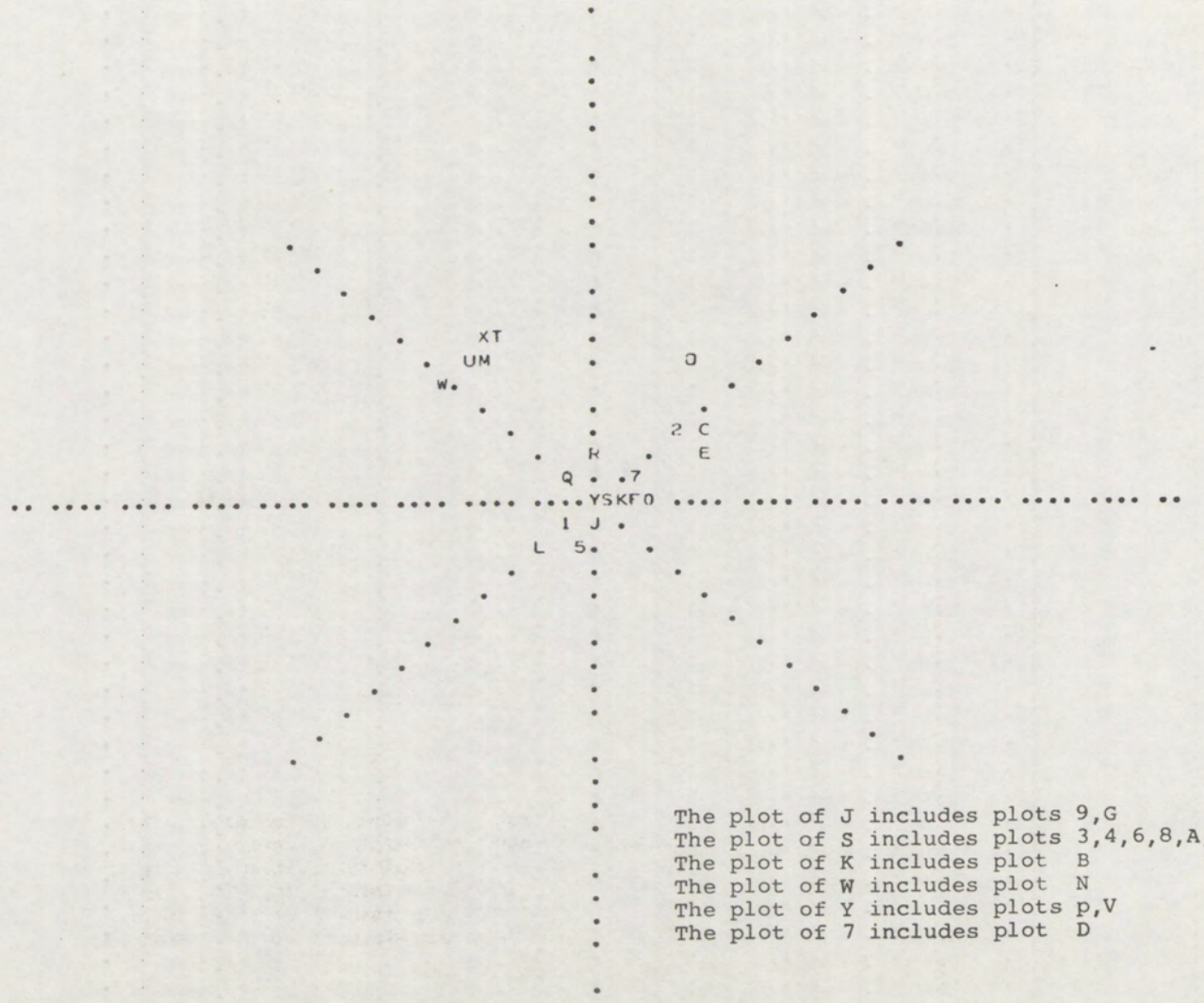
(4X,2(I4,3I3,2X))

36	5.53.5	5.05.0	6.53.0	F	D
37	5.05.5	6.53.0	5.05.0	D	F
38	5.53.0	5.05.0	6.53.0	F	D
39	6.04.0	6.53.0	6.53.0	D	D
40	6.55.5	6.53.0	7.05.0	D	D
41	5.05.5	6.53.0	6.05.0	D	C
42	6.06.0	6.53.0	6.53.0	D	D
43	6.05.0	6.53.0	5.05.0	D	F
44	6.02.5	6.53.0	5.05.0	D	F
45	6.56.0	6.53.0	5.05.0	D	E
46	4.06.0	6.53.0	6.53.0	D	D
47	6.05.0	6.53.0	6.53.0	D	D
48	5.55.0	5.04.0	6.53.0	C	D
49	5.05.0	5.55.0	5.04.0	L	C
50	5.05.5	5.55.0	5.05.0	L	A
51	6.05.0	6.05.0	5.04.0	A	C
52	6.05.0	4.55.0	3.06.0	G	P
53	6.04.5	3.06.0	3.06.0	P	P
54	7.05.5	5.04.0	6.05.0	C	E
55	5.53.5	5.55.0	5.55.0	L	L
56	5.55.0	5.55.0	6.53.0	L	D
57	6.05.0	5.55.0	6.53.0	L	D
58	6.05.5	5.55.0	5.55.0	L	L
59	7.06.0	5.04.5	5.55.0	M	L
60	5.54.0	5.55.0	5.04.0	L	C
61	5.06.5	5.55.0	6.05.0	L	E
62	6.06.0	5.55.0	6.05.0	L	E
63	6.53.0	5.04.0	5.05.0	C	A
64	5.05.0	5.55.0	5.05.0	L	A
65	6.06.0	5.55.0	5.05.0	L	A
66	6.06.0	5.55.0	5.04.0	L	C
67	7.06.0	5.55.0	5.05.0	L	A
68	5.55.0	5.55.0	5.05.0	L	A
69	7.05.5	5.55.0	6.53.0	L	D
70	5.54.5	5.04.0	5.05.0	C	A

1 2 3 4 5 6 7 8 9 0 A B C D E F G H I J K L M N O P Q R S T U V W X Y

APPENDIX V

STUDENTS TO THEIR TEACHERS. PART 1 (SECOND THEME)



The plot of J includes plots 9,G
The plot of S includes plots 3,4,6,8,A,H,I
The plot of K includes plot B
The plot of W includes plot N
The plot of Y includes plots p,V
The plot of 7 includes plot D

STUDENTS TO THEIR TEACHERS, PART 1 (SECOND THEME)

STUDENT COUNT = 35

JURY CONSTANT = 1.0000

FACTOR LOADINGS = 1.00

ID	STUDENT	TEACHER	HORIZONTAL	VERTICAL	SYMBOL
1	-5.0	0.0	-2.500	-1.250	1
2	12.0	0.0	6.000	3.000	2
3	2.8	0.0	1.375	0.688	3
4	0.0	-3.0	1.500	-0.750	4
5	-6.5	-3.0	-1.750	-2.375	5
6	0.0	-3.0	1.500	-0.750	6
7	6.5	0.0	3.250	1.625	7
8	0.0	-3.0	1.500	-0.750	8
9	-2.8	-3.0	0.125	-1.438	9
10	6.0	-2.8	4.375	0.813	0
11	0.0	-2.8	1.375	-0.688	A
12	2.5	-2.8	2.625	-0.063	B
13	15.0	-2.8	8.875	3.063	C
14	3.5	-3.0	3.250	0.125	D
15	14.0	-3.0	8.500	2.750	E
16	3.0	-3.0	3.000	0.000	F
17	-2.8	-3.0	0.125	-1.438	G
18	0.0	-3.0	1.500	-0.750	H
19	0.0	-3.0	1.500	-0.750	I
20	-2.5	-2.8	0.125	-1.313	J
21	2.5	-3.0	2.750	-0.125	K
22	-10.0	0.0	-5.000	-2.500	L
23	5.0	22.8	-8.875	6.938	M
24	2.8	22.8	-10.000	6.375	N
25	21.0	6.0	7.500	6.750	O
26	0.0	0.0	0.000	0.000	P
27	0.0	6.0	-3.000	1.500	Q
28	6.0	5.0	0.500	2.750	R
29	3.0	0.0	1.500	0.750	S
30	7.0	22.8	-7.875	7.438	T
31	3.0	22.8	-9.875	6.438	U
32	0.0	0.0	0.000	0.000	V
33	0.0	22.8	-11.375	5.688	W
34	6.0	22.8	-8.375	7.188	X
35	0.0	0.0	0.000	0.000	Y

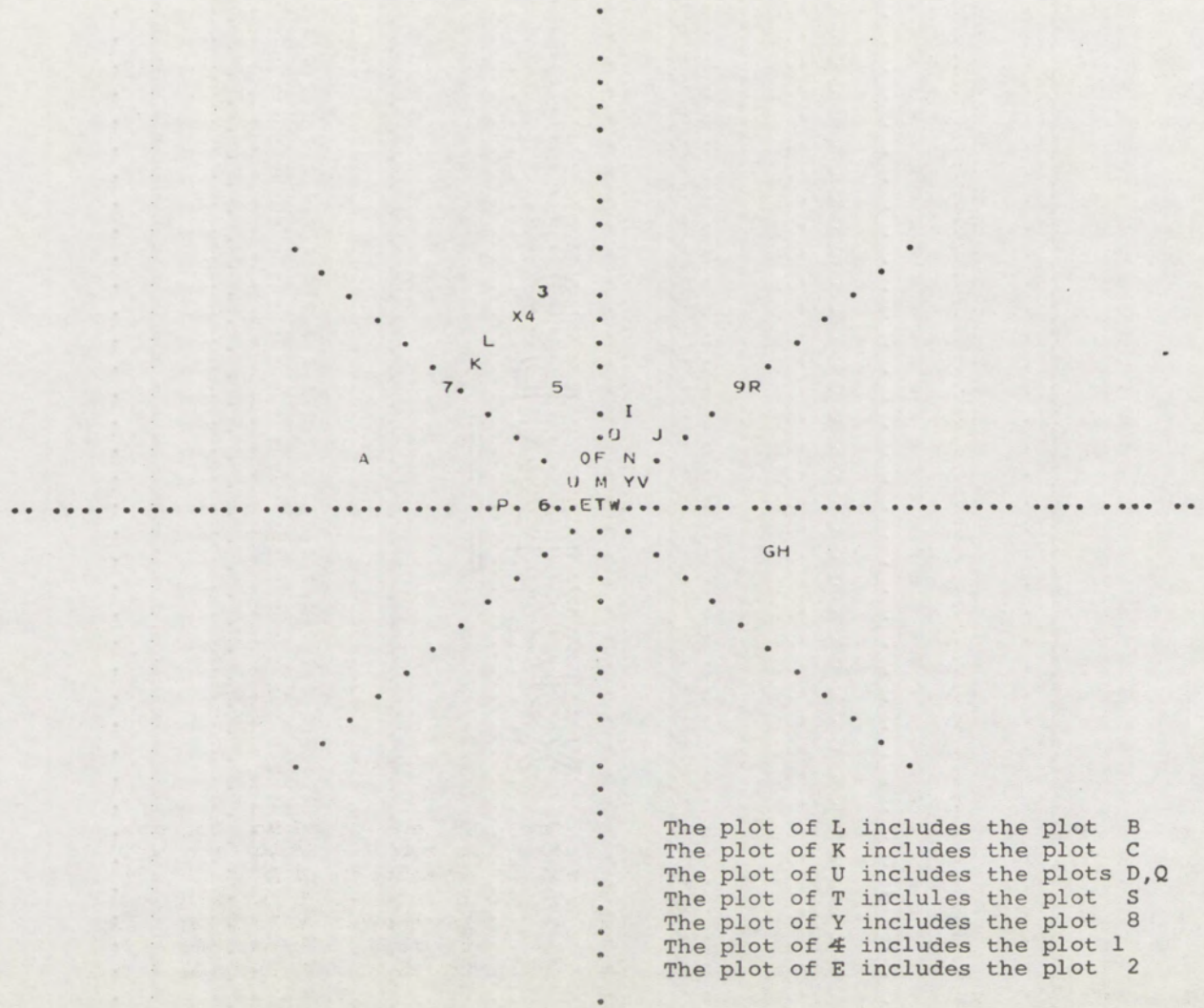
STUDENTS TO THEIR TPACHERS. PART 1 (SECOND THEME)

(4X,F4.0,F3.0, 7X,F4.0,F3.0)

1	4.05.0	7.07.0	7.07.0	I	I
2	6.04.0	7.07.0	7.07.0	I	I
3	5.55.0	5.56.0	7.07.0	K	T
4	6.06.0	5.56.0	5.56.0	K	K
5	6.56.5	5.56.0	5.56.0	K	K
6	7.07.0	5.56.0	5.56.0	K	K
7	6.55.5	5.56.0	7.07.0	K	I
8	6.06.0	5.56.0	5.56.0	K	K
9	5.05.5	5.56.0	5.56.0	K	K
10	6.05.0	5.05.5	5.05.5	J	J
11	4.54.5	5.05.5	5.05.5	J	J
12	5.04.5	5.05.5	5.05.5	J	J
13	6.03.5	5.05.5	5.05.5	J	J
14	7.06.5	5.05.5	5.56.0	J	K
15	7.05.0	5.05.5	5.56.0	J	K
16	6.05.5	5.05.5	5.56.0	J	K
17	6.05.5	5.05.5	5.56.0	J	K
18	5.05.0	5.05.5	5.56.0	J	K
19	6.06.0	5.05.5	5.56.0	J	K
20	4.55.0	3.06.0	5.05.5	D	J
21	5.04.5	5.56.0	5.56.0	K	K
22	3.05.0	6.53.0	5.05.0	D	F
23	5.04.0	5.04.0	6.53.0	C	D
24	5.55.0	5.04.0	6.53.0	C	D
25	7.04.0	5.04.0	6.05.0	C	E
26	5.05.0	6.53.0	5.05.0	D	F
27	5.55.5	5.05.0	6.05.0	F	E
28	6.05.0	6.53.0	5.04.0	D	C
29	6.05.5	6.53.0	5.05.0	D	F
30	7.06.0	6.53.0	6.53.0	D	D
31	6.05.5	5.05.0	6.53.0	F	D
32	5.05.0	5.05.0	5.05.0	G	F
33	5.05.0	6.53.0	6.53.0	D	D
34	6.05.0	6.53.0	6.53.0	D	D
35	5.05.0	6.53.0	5.05.0	D	F

1 2 3 4 5 6 7 8 9 0 A B C D E F G H I J K L M N O P Q R S T U V W X Y

STUDENTS TO THEIR TEACHERS, PART 2 (SECOND THEME)



The plot of L includes the plot B
The plot of K includes the plot C
The plot of U includes the plots D,Q
The plot of T inclules the plot S
The plot of Y includes the plot 8
The plot of 4 includes the plot 1
The plot of E includes the plot 2

STUDENTS TO THEIR TEACHERS, PART 2 (SECOND THEME)

STUDENT COUNT = 35

JURY CONSTANT = 1.0000

FACTOR LOADINGS = 1.00

ID	STUDENT	TEACHER	HORIZONTAL	VERTICAL	SYMBOL
36	11.0	22.8	-5.875	8.438	1
37	-2.8	0.0	-1.375	-0.688	2
38	13.8	22.8	-4.500	9.125	3
39	12.0	22.8	-5.375	8.688	4
40	6.5	14.0	-3.750	5.125	5
41	-2.8	6.0	-4.375	0.813	6
42	0.0	22.8	-11.375	5.688	7
43	6.0	0.0	3.000	1.500	8
44	21.0	0.0	10.500	5.250	9
45	3.3	6.0	-1.375	2.313	0
46	-12.0	22.8	-17.375	2.688	A
47	6.0	22.8	-8.375	7.188	B
48	3.8	22.8	-10.000	6.375	C
49	0.0	5.0	-2.500	1.250	D
50	-2.8	0.0	-1.375	-0.688	E
51	6.0	5.0	0.500	2.750	F
52	6.0	-18.0	12.000	-3.000	G
53	9.0	-18.0	13.500	-2.250	H
54	10.5	6.0	2.250	4.125	I
55	11.0	2.8	4.125	3.438	J
56	2.8	22.8	-10.000	6.375	K
57	6.0	22.8	-8.375	7.188	L
58	3.0	2.8	0.125	1.438	M
59	7.0	2.8	2.125	2.438	N
60	8.3	5.0	1.625	3.313	O
61	-9.8	6.0	-7.875	-0.938	P
62	0.0	6.0	-3.000	1.500	Q
63	22.8	0.0	11.375	5.688	R
64	0.0	0.0	0.000	0.000	S
65	0.0	0.0	0.000	0.000	T
66	0.0	5.0	-2.500	1.250	U
67	7.0	0.0	3.500	1.750	V
68	2.8	0.0	1.375	0.688	W
69	10.5	22.8	-6.125	8.313	X
70	5.5	0.0	2.750	1.375	Y

STUDENTS TO THEIR TEACHERS, PART 2 (SECOND THEME)

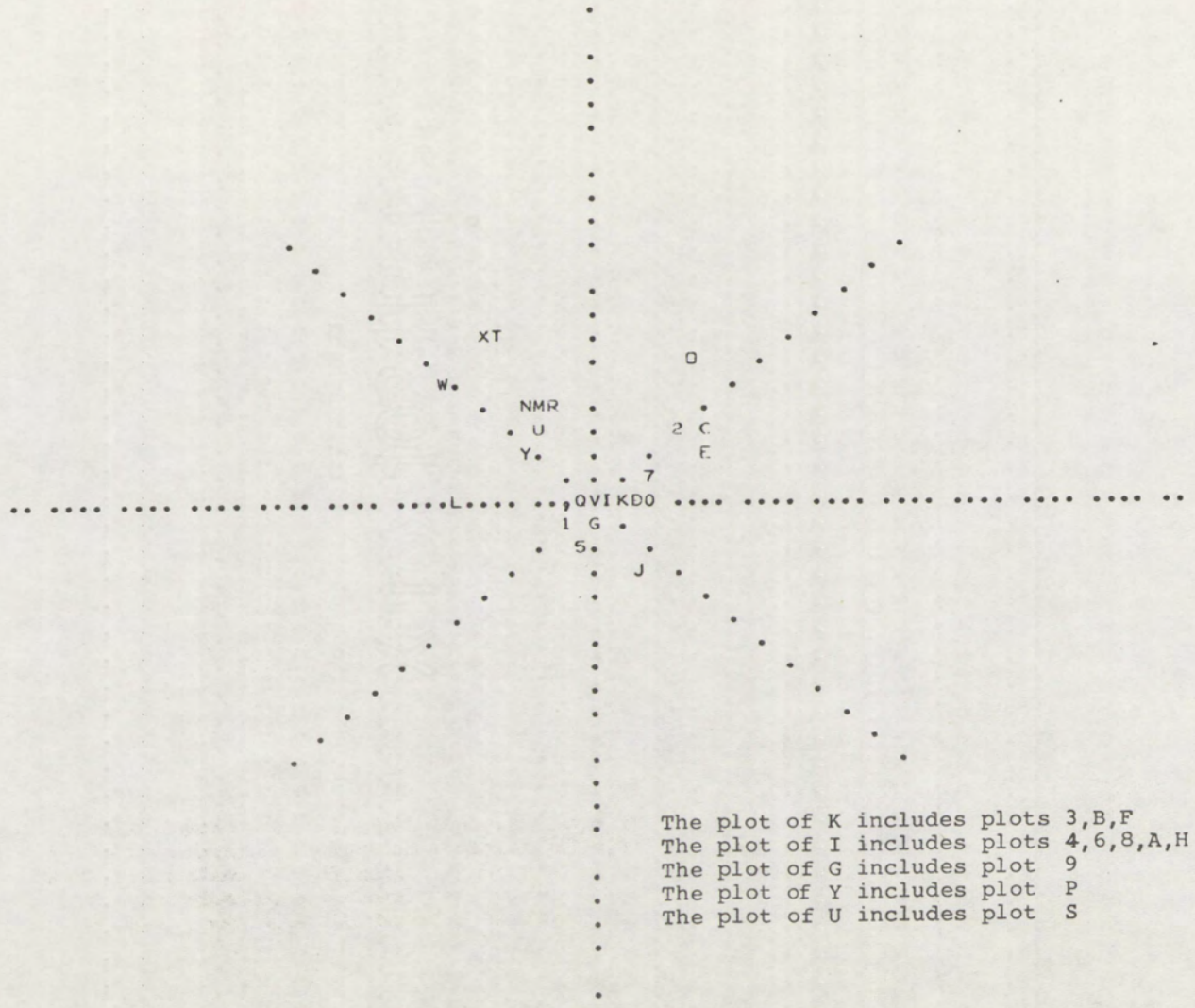
(4X,F4.0,F3.0, 7X,F4.0,F3.0)

36	5.53.5	5.05.0	6.53.0	F	D
37	5.05.5	6.53.0	5.05.0	D	F
38	5.53.0	5.05.0	6.54.0	F	D
39	6.04.0	6.53.0	6.53.0	D	D
40	6.55.5	6.53.0	7.05.0	D	D
41	5.05.5	6.53.0	6.05.0	D	E
42	6.06.0	6.53.0	6.53.0	D	D
43	6.05.0	6.53.0	5.05.0	D	F
44	6.02.5	6.53.0	5.05.0	D	F
45	6.56.0	5.53.0	6.05.0	D	F
46	4.06.0	6.53.0	6.53.0	D	D
47	6.05.0	6.53.0	6.53.0	D	D
48	5.55.0	5.04.0	6.53.0	C	D
49	5.05.0	5.55.0	5.04.0	L	C
50	5.05.5	5.55.0	5.05.0	L	A
51	6.05.0	5.05.0	5.04.0	A	C
52	6.05.0	4.56.0	3.06.0	Q	P
53	6.04.5	3.06.0	3.06.0	P	P
54	7.05.5	5.04.0	6.05.0	C	E
55	5.53.5	5.55.0	5.55.0	L	L
56	5.55.0	5.55.0	6.53.0	L	D
57	6.05.0	5.55.0	6.53.0	L	D
58	6.05.5	5.55.0	5.55.0	L	L
59	7.06.0	5.04.5	5.55.0	M	L
60	5.54.0	5.55.0	5.04.0	L	C
61	5.06.5	5.55.0	6.05.0	L	E
62	6.06.0	5.55.0	6.05.0	L	E
63	6.53.0	5.04.0	5.05.0	C	A
64	5.05.0	5.55.0	5.05.0	L	A
65	6.06.0	5.55.0	5.05.0	L	A
66	6.06.0	5.55.0	5.04.0	L	C
67	7.06.0	5.55.0	5.05.0	L	A
68	5.55.0	5.55.0	5.05.0	L	A
69	7.05.5	5.55.0	6.53.0	L	D
70	5.54.5	5.04.0	5.05.0	C	A

1 2 3 4 5 6 7 8 9 0 A B C D E F G H I J K L M N O P Q R S T U V W X Y

APPENDIX VI

STUDENTS TO THEIR TEACHERS, PART 1 (BOTH THEMES)



The plot of K includes plots 3,B,F
The plot of I includes plots 4,6,8,A,H
The plot of G includes plot 9
The plot of Y includes plot P
The plot of U includes plot S

STUDENTS TO THEIR TEACHERS, PART 1 (BOTH THEMES)

STUDENT COUNT = 35

JURY CONSTANT = 2.0000

FACTOR LOADINGS = 1.00 1.00

ID	STUDENT	TEACHER	HORIZONTAL	VERTICAL	SYMBOL
1	-5.0	0.0	-2.500	-1.250	1
2	12.0	0.0	6.000	3.000	2
3	2.8	-1.5	2.125	0.313	3
4	3.0	-3.0	1.500	-0.750	4
5	-6.5	-3.0	-1.750	-2.375	5
6	0.0	-3.0	1.500	-0.750	6
7	6.5	-1.5	4.000	1.250	7
8	0.0	-3.0	1.500	-0.750	8
9	-2.8	-3.0	0.125	-1.438	9
10	6.0	-2.8	4.375	0.813	0
11	0.0	-2.8	1.375	-0.688	A
12	2.5	-2.8	2.625	-0.063	B
13	13.0	-2.8	8.875	3.063	C
14	3.5	-2.9	3.188	0.156	D
15	14.0	-2.9	8.438	2.781	E
16	3.0	-2.9	2.938	0.031	F
17	-2.8	-2.9	0.063	-1.406	G
18	0.0	-2.9	1.438	-0.719	H
19	0.0	-2.9	1.438	-0.719	I
20	-2.5	-10.4	3.938	-3.219	J
21	2.5	-3.0	2.750	-0.125	K
22	-10.0	11.4	-10.688	0.344	L
23	5.0	13.9	-4.438	4.719	M
24	2.8	13.9	-5.563	4.156	N
25	21.0	5.5	7.750	6.625	O
26	0.0	11.4	-5.688	2.844	P
27	0.0	3.0	-1.500	0.750	Q
28	6.0	13.9	-3.938	4.969	R
29	3.0	11.4	-4.188	3.594	S
30	7.0	22.8	-7.875	7.438	T
31	3.0	11.4	-4.188	3.594	U
32	0.0	0.0	0.000	0.000	V
33	0.0	22.8	-11.375	5.688	W
34	6.0	22.8	-8.375	7.188	X
35	0.0	11.4	-5.688	2.844	Y

STUDENTS TO THEIR TEACHERS, PART 1 (BOTH THEMES)

(4X,3(F4.0,F3.0))

1	4.05.0	7.07.0	7.07.0	I	I
2	6.04.0	7.07.0	7.07.0	I	I
3	5.55.0	5.56.0	7.07.0	K	I
4	6.06.0	5.56.0	5.56.0	K	K
5	5.56.5	5.56.0	5.56.0	K	K
6	7.07.0	5.56.0	5.56.0	K	K
7	6.55.5	5.56.0	7.07.0	K	I
8	6.06.0	5.56.0	5.56.0	K	K
9	5.05.5	5.56.0	5.56.0	K	K
10	6.05.0	5.05.5	5.05.5	J	J
11	4.54.5	5.05.5	5.05.5	J	J
12	5.04.5	5.05.5	5.05.5	J	J
13	6.03.5	5.05.5	5.05.5	J	J
14	7.06.5	5.05.5	5.56.0	J	K
15	7.05.0	5.05.5	5.56.0	J	K
16	6.05.5	5.05.5	5.56.0	J	K
17	5.05.5	5.05.5	5.56.0	J	K
18	5.05.0	5.05.5	5.56.0	J	K
19	6.06.0	5.05.5	5.56.0	J	K
20	4.55.0	3.06.0	5.05.5	P	J
21	5.04.5	5.56.0	5.56.0	K	K
22	3.05.0	6.53.0	5.05.0	D	F
23	5.04.0	5.04.0	6.53.0	C	D
24	5.55.0	5.04.0	6.53.0	C	D
25	7.04.0	5.04.0	6.05.0	C	E
26	5.05.0	6.53.0	5.05.0	D	F
27	5.55.5	5.05.0	6.05.0	F	E
28	6.05.0	6.53.0	5.04.0	D	C
29	6.05.5	6.53.0	5.05.0	D	F
30	7.06.0	6.53.0	6.53.0	D	D
31	6.05.5	5.05.0	6.53.0	F	D
32	5.05.0	5.05.0	5.05.0	G	F
33	5.05.0	6.53.0	6.53.0	D	D
34	6.05.0	6.53.0	6.53.0	D	D
35	6.05.0	6.53.0	5.05.0	D	F

1
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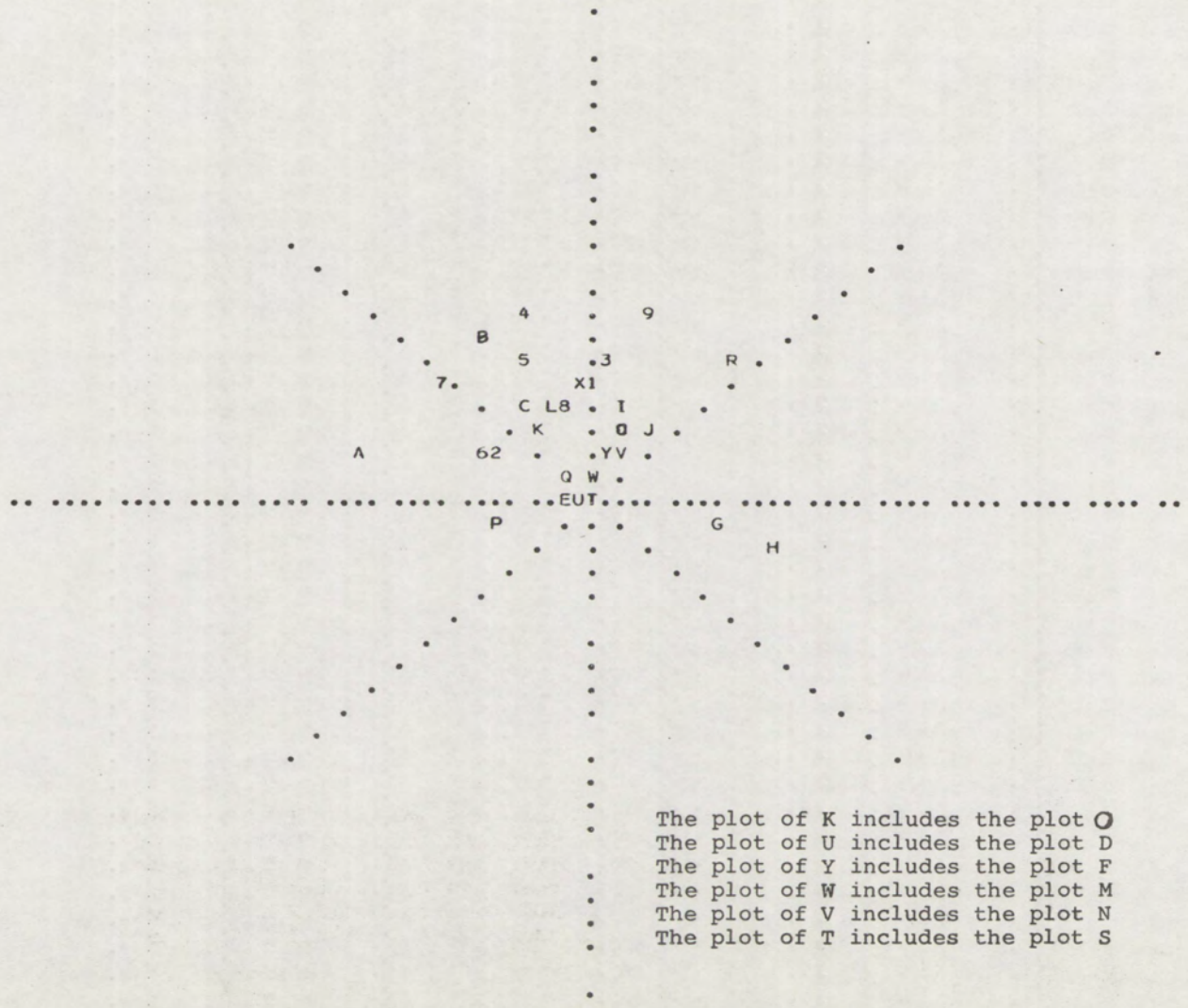
Y

STUDENTS TO THEIR TEACHERS, PART 2 (BOTH THEMES)



The plot of K includes the plot O
The plot of U includes the plot D
The plot of Y includes the plot F
The plot of W includes the plot M
The plot of V includes the plot N
The plot of T includes the plot S

STUDENTS TO THEIR TEACHERS, PART 2 (BOTH THEMES)

STUDENT COUNT = 35

JURY CONSTANT = 2.0000

FACTOR LOADINGS = 1.00 1.00

ID	STUDENT	TEACHER	HORIZONTAL	VERTICAL	SYMBOL
36	11.0	11.4	-0.188	5.594	1
37	-2.8	11.4	-7.063	2.156	2
38	13.8	11.4	1.188	6.281	3
39	12.0	22.8	-5.375	8.688	4
40	6.5	18.4	-5.938	6.219	5
41	-2.8	14.4	-8.563	2.906	6
42	0.0	22.8	-11.375	5.688	7
43	6.0	11.4	-2.688	4.344	8
44	21.0	11.4	4.813	8.094	9
45	3.3	14.4	-5.563	4.406	0
46	-12.0	22.8	-17.375	2.688	A
47	6.0	22.8	-8.375	7.188	B
48	2.8	13.9	-5.563	4.156	C
49	0.0	3.9	-1.938	0.969	D
50	-2.8	1.4	-2.063	-0.344	E
51	6.0	2.5	1.750	2.125	F
52	6.0	-13.5	9.750	-1.875	G
53	9.0	-18.0	13.500	-2.250	H
54	10.5	5.5	2.500	4.000	I
55	11.0	2.8	4.125	3.438	J
56	2.8	12.8	-5.000	3.875	K
57	6.0	12.8	-3.375	4.688	L
58	3.0	2.8	0.125	1.438	M
59	7.0	2.6	2.188	2.406	N
60	8.3	3.9	2.188	3.031	O
61	-9.8	4.4	-7.063	-1.344	P
62	0.0	4.4	-2.188	1.094	Q
63	22.8	2.5	10.125	6.313	R
64	0.0	1.4	-0.688	0.344	S
65	0.0	1.4	-0.688	0.344	T
66	0.0	3.9	-1.938	0.969	U
67	7.0	1.4	2.813	2.094	V
68	2.8	1.4	0.688	1.031	W
69	10.5	12.8	-1.125	5.813	X
70	5.5	2.5	1.500	2.000	Y

STUDENTS TO THEIR TEACHERS, PART 2 (BOTH THEMES)

(4X,3(F4.0,F3.0))

36	5.53.5	5.05.0	6.53.0	F D	1
37	5.05.5	6.53.0	5.05.0	D F	2
38	5.53.0	5.05.0	6.53.0	F D	3
39	6.04.0	6.53.0	6.53.0	D D	4
40	6.55.5	6.53.0	7.05.0	D D	5
41	5.05.5	6.53.0	6.05.0	D E	6
42	6.06.0	6.53.0	6.53.0	D D	7
43	6.05.0	6.53.0	5.05.0	D F	8
44	6.02.5	6.53.0	5.05.0	D F	9
45	6.56.0	6.53.0	6.05.0	D E	0
46	4.06.0	6.53.0	6.53.0	D D	A
47	6.05.0	6.53.0	6.53.0	D D	B
48	5.55.0	5.04.0	6.53.0	C D	C
49	5.05.0	5.55.0	5.04.0	L C	D
50	5.05.5	5.55.0	5.05.0	L A	E
51	6.05.0	5.05.0	5.04.0	A C	F
52	6.05.0	4.56.0	3.06.0	Q P	G
53	6.04.5	3.06.0	3.06.0	P P	H
54	7.05.5	5.04.0	6.05.0	C E	I
55	5.53.5	5.55.0	5.55.0	L L	J
56	5.55.0	5.55.0	6.53.0	L D	K
57	6.05.0	5.55.0	6.53.0	L D	L
58	6.05.5	5.55.0	5.55.0	L L	M
59	7.06.0	5.04.5	5.55.0	M L	N
60	5.54.0	5.55.0	5.04.0	L C	O
61	5.06.5	5.55.0	6.05.0	L E	P
62	6.06.0	5.55.0	6.05.0	L E	Q
63	6.53.0	5.04.0	5.05.0	C A	R
64	5.05.0	5.55.0	5.05.0	L A	S
65	6.06.0	5.55.0	5.05.0	L A	T
66	6.06.0	5.55.0	5.04.0	L C	U
67	7.06.0	5.55.0	5.05.0	L A	V
68	5.55.0	5.55.0	5.05.0	L A	W
69	7.05.5	5.55.0	6.53.0	L D	X
70	5.54.5	5.04.0	5.05.0	C A	Y

APPENDIX VII

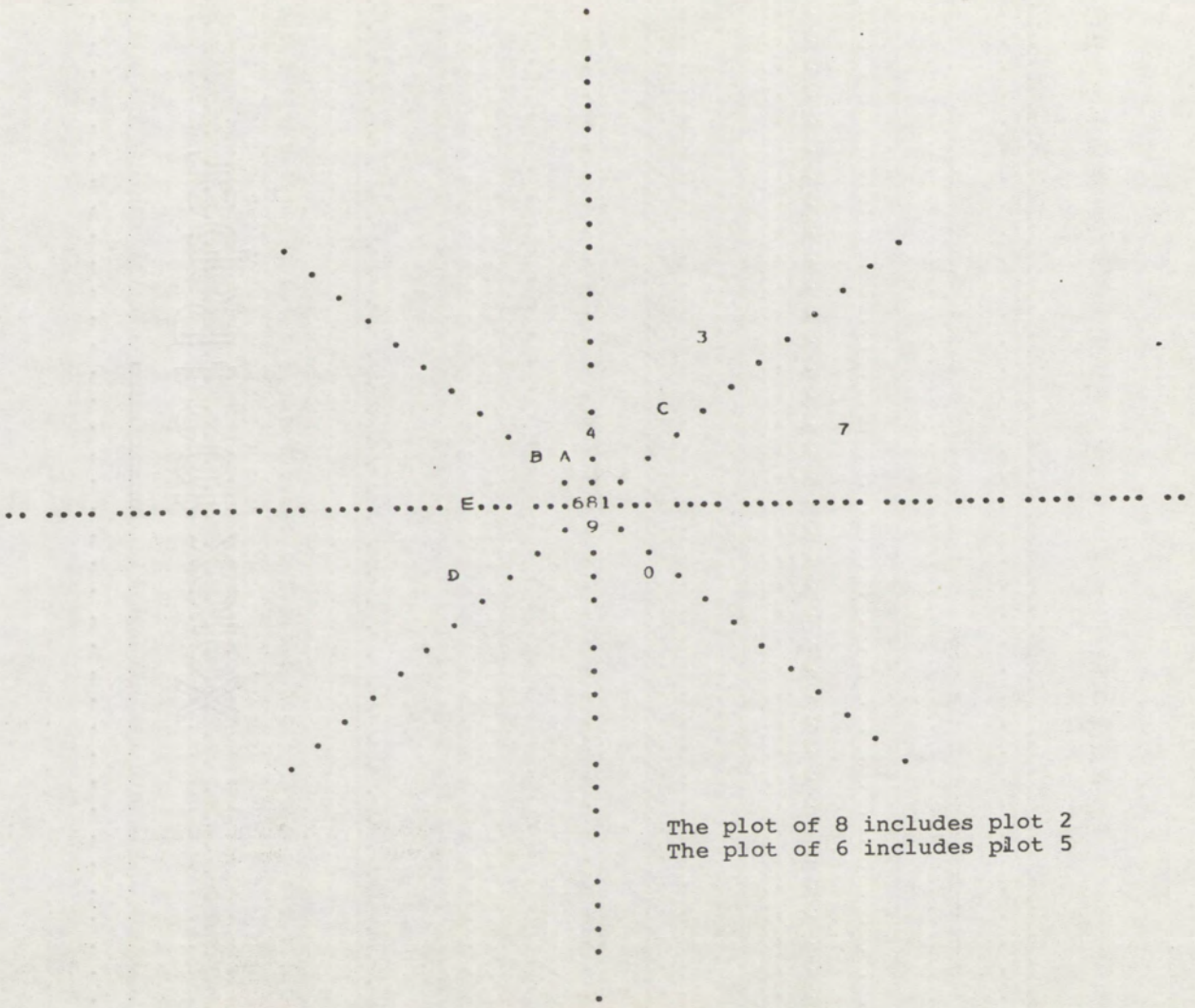
Note to the Reader

The reader should be aware that the computer program developed for the original study done by Felix Garcia Jr. flowed in only one direction. John Grillo designed the program to synthesize student and teacher scores from the Kerlinger-Kaya Progressive-Traditional Educational Scale when a student selected a teacher. No further programming was done to allow for a teacher to student selection, therefore, when reading the graph plots, one should flip flop the horizontal apices so the 0^{o} - 360^{o} apex would represent the ultimate of attitude when a progressive teacher selected a traditional student; and, the 180^{o} apex would represent the ultimate of attitude when a traditional teacher selected a progressive student.

All other diagonals and octants would remain the same as was described in the body of Chapter IV and Appendix II.

The reader should also note that on the page immediately following the graph (Teachers to their Students--First Theme) the column headings of "Student" and "Teacher" should be flip flopped so the proper scores are credited to the selecting teachers.

TEACHERS TO THEIR STUDENTS (FIRST THEME)



The plot of 8 includes plot 2
The plot of 6 includes plot 5

TEACHERS TO THEIR STUDENTS (FIRST THEME).

STUDENT COUNT = 15

JURY CONSTANT = 1.0000

FACTOR LOADINGS = 1.00

ID	STUDENT	TEACHER	HORIZONTAL	VERTICAL	SYMBOL
A	0.0	-2.8	1.375	-0.688	1
B	0.0	0.0	0.000	0.000	2
D	22.8	6.0	8.375	7.188	3
E	6.0	6.0	0.000	3.000	4
F	0.0	3.0	-1.500	0.750	5
G	0.0	3.3	-1.625	0.813	6
H	26.0	-11.0	18.500	3.750	7
I	0.0	0.0	0.000	0.000	8
J	-2.8	-2.8	0.000	-1.375	9
K	-3.0	-11.0	4.000	-3.500	0
M	2.5	7.0	-2.250	2.375	A
N	0.0	9.0	-4.500	2.250	B
O	14.0	2.8	5.625	4.188	C
P	-18.0	2.8	-10.375	-3.813	D
Q	-9.0	10.5	-9.750	0.375	E

TEACHERS TO THEIR STUDENTS (FIRST THEME).

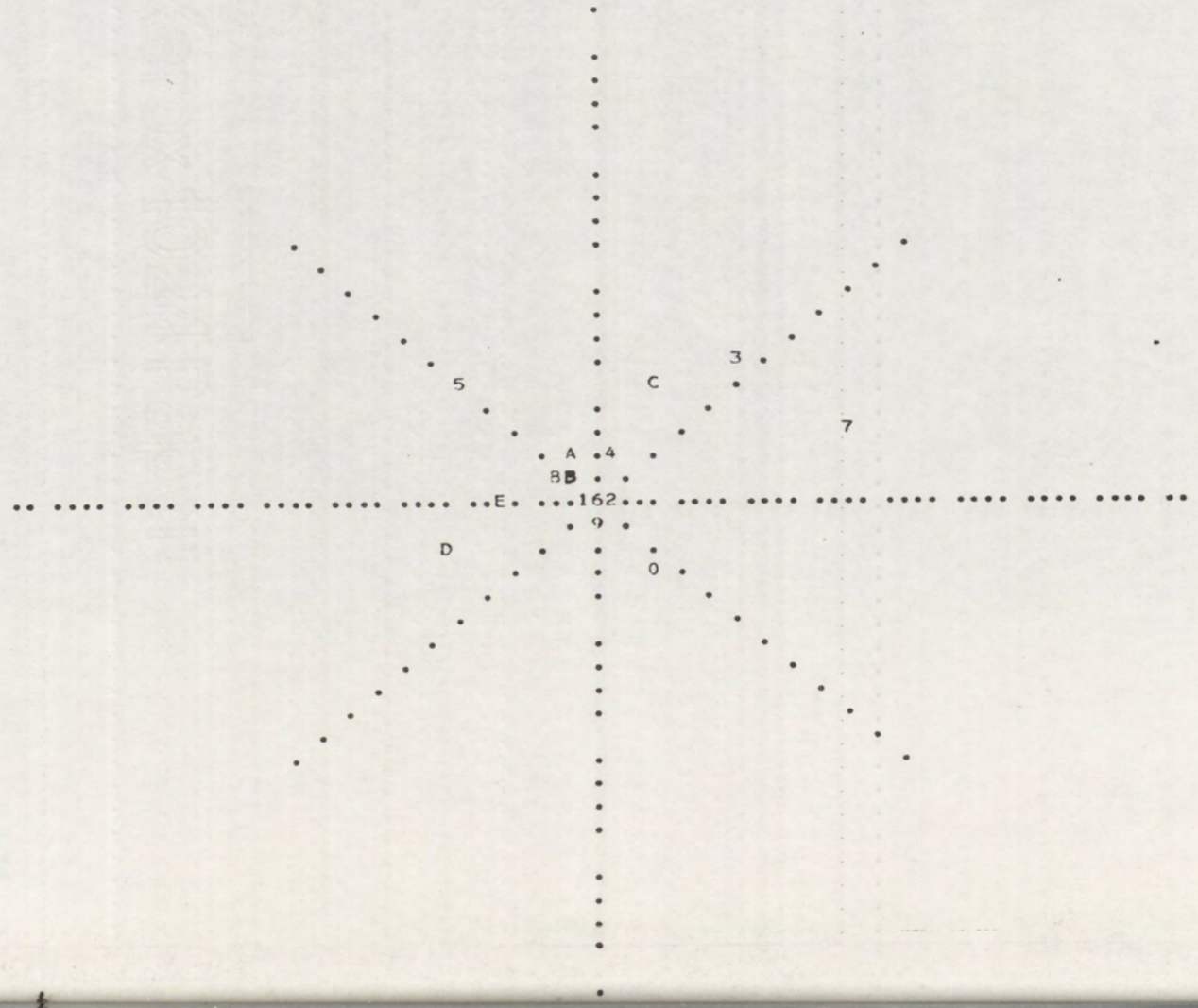
(4X, 2 (F4.0, F3.0))

A	5.05.0	5.05.5	5.04.5	50	70
B	6.06.0	6.06.0	5.05.5	19	17
D	6.52.0	5.05.0	5.04.5	57	70
E	6.05.0	6.05.0	5.04.5	57	70
F	5.05.0	6.05.5	7.04.0	20	25
G	5.05.0	6.56.0	5.05.0	45	32
H	6.52.5	3.55.5	3.55.5		
I	7.07.0	7.07.0	6.55.5	6	7
J	5.05.5	5.05.5	5.05.5	17	17
K	5.56.0	3.55.5	3.55.5		
M	5.04.5	7.06.0	7.06.0	59	59
N	5.05.0	6.04.5	6.05.0	53	57
O	7.05.0	5.55.0	6.05.0	56	57
P	3.06.0	5.55.0	6.05.0	68	57
Q	4.54.0	7.05.5	6.05.0	69	52

1 2 3 4 5 6 7 8 9 0 A B C D E

APPENDIX VIII

TEACHERS TO THEIR STUDENTS (SECOND THEME)



TEACHERS TO THEIR STUDENTS (SECOND THEME)

STUDENT COUNT = 15

JURY CONSTANT = 1.0000

FACTOR LOADINGS = 1.00

ID	STUDENT	TEACHER	HORIZONTAL	VERTICAL	SYMBOL
A	0.0	2.5	-1.250	0.625	1
B	0.0	-2.8	1.375	-0.688	2
D	22.8	2.5	10.125	6.313	3
E	6.0	2.5	1.750	2.125	4
F	0.0	21.0	-10.500	5.250	5
G	0.0	0.0	0.000	0.000	6
H	26.0	-11.0	18.500	3.750	7
I	0.0	6.5	-3.250	1.625	8
J	-2.8	-2.8	0.000	-1.375	9
K	-3.0	-11.0	4.000	-3.500	0
M	2.5	7.0	-2.250	2.375	A
N	0.0	6.0	-3.000	1.500	B
O	14.0	6.0	4.000	5.000	C
P	-18.0	6.0	-12.000	-3.000	D
Q	-9.0	6.0	-7.500	-0.750	E

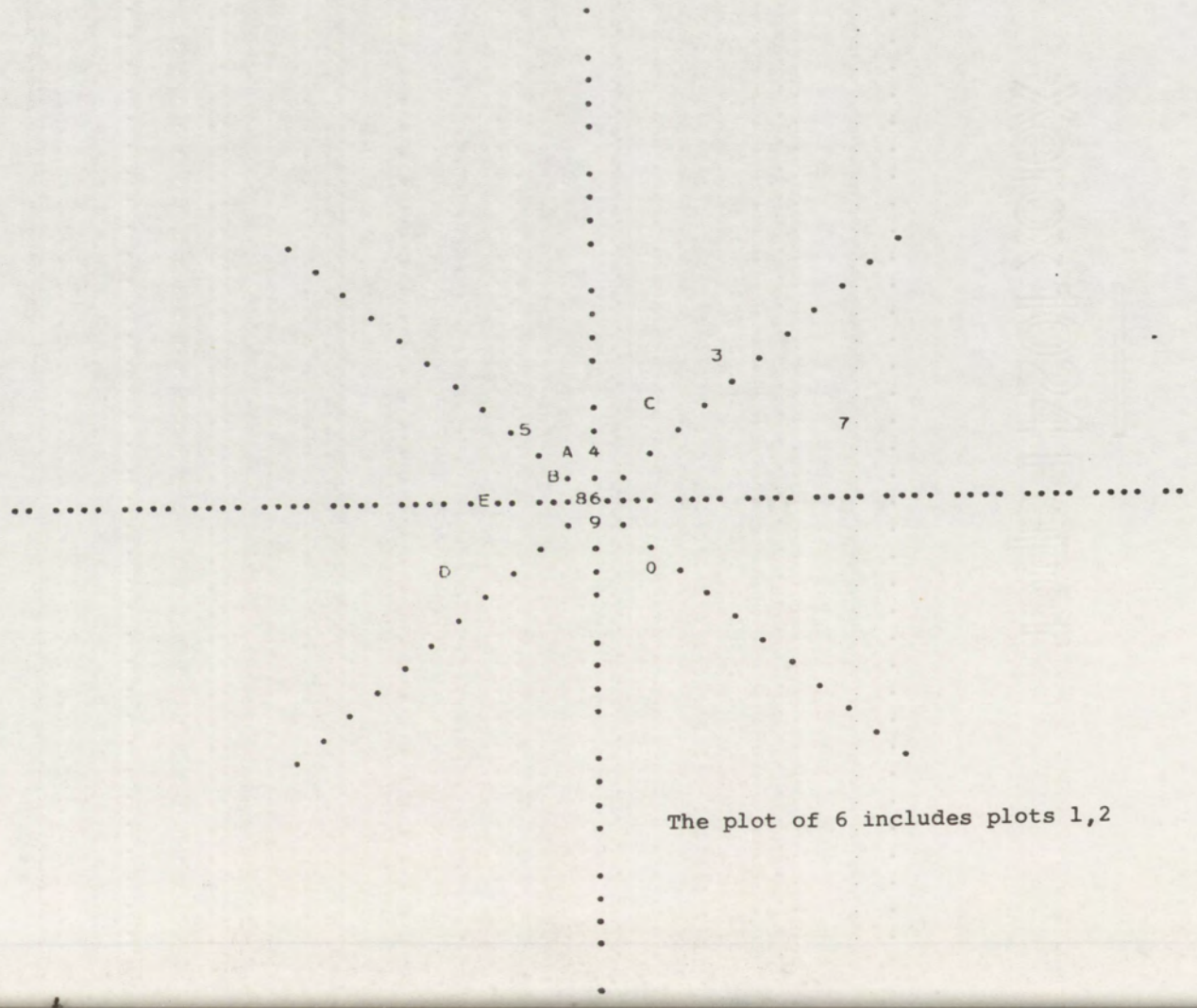
TEACHERS TO THEIR STUDENTS (SECOND THEME)

(4X, F4.0,F3.0,7X,F4.0,F3.0)

A	5.05.0	5.05.5	5.04.5	50	70.	1
B	6.06.0	6.06.0	5.05.5	19	17	2
D	6.53.0	6.05.0	5.04.5	57	70	3
E	6.05.0	6.05.0	5.04.5	57	70	4
F	5.05.0	6.05.5	7.04.0	28	25	5
G	5.05.0	6.56.0	5.05.0	45	32	6
H	6.52.5	3.55.5	3.55.5			7
I	7.07.0	7.07.0	6.55.5	6	7	8
J	5.05.5	5.05.5	5.05.5	17	17	9
K	6.56.0	3.55.5	3.55.5			0
M	5.04.5	7.06.0	7.06.0	59	59	A
N	5.05.0	6.04.5	6.05.0	53	57	B
O	7.05.0	5.55.0	6.05.0	56	57	C
P	3.06.0	5.55.0	6.05.0	68	57	D
Q	4.56.0	7.05.5	6.05.0	69	52	E

APPENDIX IX

TEACHERS TO THEIR STUDENTS (BOTH THEMES)



The plot of 6 includes plots 1,2

TEACHERS TO THEIR STUDENTS (BOTH THEMES).

STUDENT COUNT = 15

JURY CONSTANT = 2.0000

FACTOR LOADINGS = 1.00 1.00

ID	STUDENT	TEACHER	HORIZONTAL	VERTICAL	SYMBOL
A	0.0	-0.1	0.063	-0.031	1
B	0.0	-1.4	0.688	-0.344	2
D	22.8	4.3	9.250	6.750	3
E	6.0	4.3	0.875	2.563	4
F	0.0	12.0	-6.000	3.000	5
G	0.0	1.6	-0.813	0.406	6
H	26.0	-11.0	18.500	3.750	7
I	0.0	3.3	-1.625	0.813	8
J	-2.8	-2.8	0.000	-1.375	9
K	-3.0	-11.0	4.000	-3.500	0
M	2.5	7.0	-2.250	2.375	A
N	0.0	7.5	-3.750	1.875	B
O	14.0	4.4	4.813	4.594	C
P	-18.0	4.4	-11.188	-3.406	D
Q	-9.0	8.3	-8.625	-0.188	E

TEACHERS TO THEIR STUDENTS (BOTH THEMES).

(4X, 3 (F4.0, F3.0))

```
 A   5.05.0 5.05.5 5.04.5     50 70   1
 B   6.06.0 6.06.0 5.05.5     19 17   2
 D   6.53.0 6.05.0 5.04.5     57 70   3
 E   6.05.0 6.05.0 5.04.5     57 70   4
 F   5.05.0 5.05.5 7.04.0     29 25   5
 G   5.05.0 6.56.0 5.05.0     45 32   6
 H   6.52.5 3.55.5 3.55.5             7
 I   7.07.0 7.07.0 6.55.5      6  7   8
 J   5.05.5 5.05.5 5.05.5     17 17   9
 K   5.56.0 3.55.5 3.55.5             0
 M   5.04.5 7.06.0 7.06.0     59 59   A
 N   5.05.0 6.04.5 6.05.0     53 57   B
 O   7.05.0 5.55.0 6.05.0     56 57   C
 P   3.06.0 5.55.0 6.05.0     68 57   D
 Q   4.56.0 7.05.5 6.05.0     69 52   E
```

APPENDIX X

Identifying Students by "ID" and "Symbol" to Correlate with Appropriate Graph Plots Which Represent Different Disciplines

Listed below is data enabling the reader to ascertain which students selected which teachers. No names are given for any participants.

The reader should match columns headed "ID" and "Symbol" on the pages immediately following graphs to correlate which student represented which discipline, Machine Trades or Data Processing. Only thirty-five students who selected teachers could be handled on one page, so two program runs were made for each problem. This matching of students from separate disciplines only works with a student to teacher selection.

Student Classification	Student Number(s)	Student Symbol
Machine Trades II	1-10	1 - 0
Machine Trades III	11-21	A - K
Data Processing II	22-47	L - B
Data Processing IV	48-51, 58-68	C - F; M - W
Data Processing V	52-57, 69,70	G - L; X, Y

Example - Student to their Teachers Part I (Second Theme) Student "ID" number 1 would represent a Machine Trades II student, and Student "ID" number 59, Part II (Second Theme) would represent a Data IV student.

APPENDIX XI

October 20, 1970

Dr. Fred N. Kerlinger
School of Education
New York University
New York City, New York

Dear Dr. Kerlinger:

I am working toward an Ed.D. degree in Secondary Education, Curriculum and Instruction at the University of New Mexico. In order to gather information for my dissertation which deals with the exchange of instructor-pupil attitudes, it is necessary for me to use a valid instrument.

In the 1959 issue (Vol. 19, No. 1) of Educational and Psychological Measurement you and Esin Kaya published an article about this particular instrument, Progressive Traditional Scale. Your instrument will form the basis for my study. Included in the research design will be an additional instrument developed by a recent graduate of the University of New Mexico.

May I have permission to use your scale for this study? If you wish I can send you a copy of my study which will be applied to a vocational education context.

If you can help me, I would appreciate it greatly.

Sincerely yours,

James L. Maw

JLM:js

NEW YORK UNIVERSITY
School of Education
WASHINGTON SQUARE, NEW YORK, N.Y. 10003
AREA 212 598-2774

Division of Behavioral Sciences

October 29, 1970

Mr. James L. Maw
Albuquerque Technical-Vocational Institute
525 Buena Vista S.E.
Albuquerque, New Mexico 87106

Dear Mr. Maw:

Thank you for your letter of October 20. As Dr. Kerlinger is away on sabbatical, I will attempt to answer it as best I can.

You may use Dr. Kerlinger's scale in any way you wish in your research. He has no objection to the use of his scales, but is interested in any significant findings. There is no necessity to report them, however, and you need not send your study.

I am assumming that you have a copy of the scale. If you do not, however, please let me know.

Sincerely,

D. S. Turbes

Dorothy Turbes
Secretary to Professor Kerlinger

d