EDUCATIONAL VIEWPOINTS: A STUDY OF THE OCCUPATIONAL IDEOLOGY OF INDUSTRIAL ARTS TEACHING AS RELATED TO STUDENTS IN TRAINING

Thesis for the Degree of Ph. D.
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Thomas T. Tsuji
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ABSTRACT

EDUCATIONAL VIEWPOINTS: A STUDY OF THE OCCUPATIONAL IDEOLOGY OF INDUSTRIAL ARTS TEACHING AS RELATED TO STUDENTS IN TRAINING

by Thomas T. Tsuji

Statement of the Problem

The investigation attempted to test the hypothesis:

> Enrollment in an industrial arts curriculum by students involves the assimilation of educational viewpoints advocated by the members of that occupational group.

Statistical hypotheses were formulated for selected factors from a theoretical framework developed to explain occupational and nonoccupational factors concerned in the study.

General Procedure Employed in the Study

The general procedure employed to test the hypotheses included (1) operational definitions of educational philosophies as related to industrial arts, (2) the development of instruments based on the definitions, (3) the selection and administration of the instruments to a selected sample, (4) the analysis of the data, and (5) the interpretation of the findings.

The definitions of philosophies, essentialism and progressivism, as defined by Robert Swanson (1) were used as

the bases of the study. A third point of view was described for the exploratory phase of the investigation. Instruments from which information was gathered were (1) The Inventory of Educational Viewpoints by Swanson[1] and (2) the Educational Viewpoints Inventory developed by the investigator.

A group of students majoring in industrial arts from a college in New York State was selected as the sample. Analyses of the data were made by both descriptive and inferential methods.

Conclusions

The conclusions are listed as follows:

1. Senior students enrolled in industrial arts programs tend to manifest behavior more in keeping with the viewpoint of industrial arts teacher educators than do freshmen and new transfers.

2. There is a tendency for students scoring in the extreme ends of the Swanson Inventory to be (1) generalists at the progressive end of the continuum and (2) specialists at the less progressive end of the continuum.

3. Students who have memberships in two professional industrial arts clubs tend to be proportionately more progressive than nonmembers.

4. All factors of membership-nonmembership in associations of the nonvocational subculture were not differentiated by viewpoints. The exception to this was the factor of membership in religious organizations which is in need of further study before a conclusive decision may be made.

---

[1]Robert S. Swanson, "The Operational Definition and Measurement of Educational Philosophy" (unpublished Ph.D. dissertation, University of Minnesota, 1955).

5. From the preceding statement it is claimed that the instruments employed in this particular investigation did measure occupational ideology and that the instruments were not able to differentiate students on factors which were categorized nonvocational.

6. It was found that senior nontransfer students were more progressive than senior transfer, Other transfer, and Other nontransfer students groups. (The capitalization of Other means that the group includes freshmen, new transfers, and possibly some first semester sophomores.)

7. Senior transfer students were proportionately more progressive than Other transfer and Other nontransfer groups.

Recommendations

The following recommendations were advanced:

1. More extensive research concerning methods and classification of educational viewpoints should be conducted.

2. Longitudinal studies should be undertaken to ascertain whether differences in viewpoints may be attributed to change of viewpoints within individuals and/or through other selective factors of the educational system.

3. Studies over larger populations of potential teachers, students in training, and teachers in the field would result in more comprehensive generalizations applicable to the occupation.

4. Further studies may be undertaken to determine relationships between (1) creativity and viewpoints of education, (2) personal preferences to particular curriculum patterns and educational viewpoints, and (3) degree of specialization in industrial education to educational viewpoints.

5. It is recommended that studies of educational viewpoints be extended to other Industrial Arts undergraduate programs to establish a broader base from which evaluation may be made of such programs.

6. It is recommended that the definitions of viewpoint patterns be extended to more operational aspects of education to enable the development of a more precise instrument.

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Thomas T. Tsuji

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CHAPTER I

INTRODUCTION

Statement of Problem

The goal of teacher education programs is the development of effective teachers. A number of studies in industrial arts education have focused attention on the identification of competent and effective teachers by a variety of research methods. The normative-survey has been the predominant investigative technique. Characteristics and factors related to teachers rated "effective" and "competent" have been used as criteria for the evaluation of potential and practicing teachers.

Many attempts to develop criteria for evaluating effective teachers have been based on factors such as (1) grade point averages and (2) ratings from opinions of supervisors and principals. A perusal of the literature revealed that educational viewpoints held by individuals enrolled in industrial education programs have not been utilized as criteria to identify competent teachers.

On the other hand, studies of teacher characteristics by some educators and social scientists have often attempted to analyze the acculturation and/or enculturation

of students into the teaching profession. W. W. Charters, Jr. (1:715-813) described the extent and orientations of various research projects concerning teachers from sociological points of view. Charters suggested value orientations held by teachers were affected in part by the process of attaining membership in the teacher profession. He concluded that the period of occupational training and education of the prospective teacher was crucial in terms of the development of occupational attitudes and values.

One aspect of a teacher's belief and value system which was likely to be affected during the period of training included the area of study underlying educational practice--educational philosophy. Teacher education programs generally have been premised upon either a philosophy or philosophies of education. Points of view regarding educational issues have been of concern to many, if not most, teacher educators.

This study attempted to measure the educational viewpoints of (1) individuals in the early stages of training and (2) individuals nearing the stage of completion of teacher education for industrial arts. Specifically, the hypothesis of this research was:

> Enrollment in an industrial arts curriculum by students involves the assimilation of educational viewpoints advocated by industrial arts teacher educators.

Purposes of the Study

The primary purpose of this study attempted to test the hypothesis specified in the preceding paragraph. Research hypotheses were generated prior to the development of the instrument, the collection of the data, and the analysis of the data.

The sub-purposes of this study were: (1) to extend the research conducted by Swanson (6) to undergraduate students majoring in industrial arts education; (2) to develop and incorporate the research technique reported by Osgood et al. (4) for further analytical purposes; and (3) to establish a theoretical framework based on educational viewpoints as the occupational ideology of teachers and students in the area of industrial arts education.

The sub-purposes, (1) that of employing Swanson's original instrument and (2) that of incorporating into the study Osgood's Semantic Differential, were considered mechanical aspects of the study. These sub-purposes were effected in the segments of the investigation concerning the method of research and the techniques employed in the analysis of the data. The sub-purpose, to establish a foundation premised on the concept that educational viewpoints are a part of the occupational ideology of industrial arts teaching, is described in detail in the chapter devoted to the research framework and hypotheses of the study.

Basic Assumptions

A basic assumption of the study was the view that undergraduate students majoring in industrial arts education possessed viewpoints regarding education. This meant that students in teacher education programs possessed views regarding educational theory and practice with or without formal experiences in professional education courses. However, it was posited that through formal guidance in coursework and the social press exerted by the educational system, students in training closest to gaining formal recognition of membership in the occupation, in this situation the act of graduation, would manifest behavior more congruent with that of industrial arts teacher educators when compared with freshmen.

The works of social scientists reviewed suggested that the values of American culture were transmitted in part by the institution of education (2:11-43; 3:17-41; 5:132-147). Most social scientists agreed that school activities were part of the socializing process in American society. Thus, it was assumed that students advancing through the social system of the school would develop value orientations concerning education. This assumption did not imply that all students would develop consistent educational viewpoints as a result of socialization through the educational institution. The assumption intended to convey the idea that

students would engender value orientations concerning educational practices by simply being a member of the social system.

The second assumption pertained to the rationale and instrument developed by Swanson (6). He concluded that it was possible to define educational philosophy in operational form and to structure an instrument which would measure the relative direction and intensity of responses on a bi-polar continuum. The operational definitions of educational philosophies included solutions to various problems in teaching from the essentialist and progressivist points of view. Swanson's claims described in the preceding sentences were accepted for purposes of this investigation. Rejection of Swanson's definitions and research methodology would have necessitated the elimination of the sub-purpose to extend this study to an undergraduate population.

Delimitation of the Study

The design of this study did not include informal social relationships as a factor to be analyzed. Investigation was centered on variables of membership in student associations recognized by the college community. In a number of instances the associations held official charters from the college governing body and in some cases were considered part of the college program.

Measurement of viewpoints of education could have meant a study concerning a number of areas of educational theory and practice. For this reason the research conducted by Swanson (6) was selected as the basis of the investigation. His study was delimited to the cognitive aspects of professional development of teaching derived from a framework of educational philosophy.

This investigation was limited to a sampling of undergraduates enrolled in the industrial arts program at State University College, Oswego, New York. The sample consisted of freshmen, transfer students, and seniors. Non-majors, part-time students, and extension students were not asked to participate in the study.

The period under study was academic year 1964-65. In addition to the delimiting factors concerning the sample and time, the investigation followed the procedures of Swanson's study (6). The reason prompting this decision was the desire to replicate the procedure of Swanson's work, and also, to extend the research to undergraduates. A change in the basic instrument and/or the analytical techniques would have contradicted a sub-purpose of this study.

Definitions of Terms Peculiar to This Study

The following terms are defined to facilitate comprehension of the report.

1. Educational Viewpoint: In this study the term means the relative emphasis of philosophy, not necessarily consistent, derived through a score as a result of being administered an inventory which was developed from an operational definition of educational philosophies.
2. College Group and Groups: Hereafter this term will be used to designate student associations that have been recognized officially by charter from the college community under study. Informal groups are not included in this category.
3. Swanson's Inventory: The instrument used in this study to measure extremeness and emphasis of educational philosophies. It was the primary instrument of this investigation.
4. Educational Viewpoints Inventory: The instrument developed for this study by the investigator; and based upon the techniques and theory set forth by Osgood et al. (4) in the Semantic Differential. This instrument was used primarily to identify patterns of viewpoints.

5. Others or Other Groups: As used in this investigation the term refers to students who are not classified as seniors. Freshmen and transfer students dominated the category of Others. The term will be written thus, Others, when reference is made to that group.

General Procedure of the Study

The initial phase of the investigation was a review of the selected literature concerning aspects thought to be of importance to the problem. The review included: (1) selected literature concerning the acceptance of the concept stated in the hypothesis; (2) selected literature concerning the measurement of viewpoints of education in industrial arts; (3) selected literature concerning viewpoints of education by other educators; (4) selected literature concerning selected factors of membership in college groups as related to attitudes and values.

The second phase included the generating of a theoretical framework for research and the stating of hypotheses from the review of literature. The method of investigation was formulated and a timetable scheduled toward the end of the second phase.

The third phase was directed to the construction and pretesting of instruments. As the instrument was being finalized the sample was identified and arrangements were

made to secure the data. The analysis of the data was made immediately after the responses were systematized on tables.

The final phase dealt with the writing of this report.

Summary of the Chapter

Briefly, the material presented in this chapter attempted to define the problem of the investigation which was stated in the form of the hypothesis:

> Enrollment in an industrial arts curriculum by students involves the assimilation of educational viewpoints advocated by industrial arts teacher educators.

The purposes of the study, the dominant one being the testing of the hypothesis, were discussed with three sub-purposes. The sub-purposes were: (1) to extend the study originated by Swanson (6), (2) to incorporate the research technique developed by Osgood and associates (4) within the framework of the study, and (3) to establish a theoretical base from which to pursue research. Assumptions underlying the investigation, limits of the study, and terminology used in the research were discussed in the chapter. The chapter was brought to a close with the section devoted to the general procedure employed in the investigation.

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CHAPTER II

REVIEW OF SELECTED LITERATURE

The review of selected literature for this investigation included:

1. studies concerning the membership in an occupation as related to the development of occupational ideology. Specific emphasis was placed on studies concerned with occupational ideology of teachers.
2. studies concerning the measurement of educational philosophies of students and teachers in industrial arts education.
3. studies concerning the measurement of educational viewpoints applicable to this investigation.
4. studies concerning the effects of membership in various college groups as related to attitudes and values.

Basically, the review attempted to effect the following purposes:

1. to ascertain the appropriateness of the major hypothesis in terms of existing theories.
2. to study the concepts underlying the measurement of educational viewpoints.

3. to ascertain the extent of conducted studies based on measurement of philosophies of education.
4. to ascertain the methods and classifications used in categorizing college students into referent groups.

A Review of Selected Literature Concerning Membership in an Occupation as Related to the Development of Occupational Ideology

The general hypothesis of this investigation was derived from writings of a number of social scientists. Dominant disciplines contributing concepts related to this study were social psychology, sociology, and cultural anthropology.

Becker and Carper (5:297). The "acquisition of ideology" was included as one of the factors which enable individuals to identify with an occupation. Becker and Carper enumerated the following factors as being prevalent in the process of occupational identification: (1) investment mechanisms, (2) development of interest and acquisition of skill, (3) internalization of motives, and (4) sponsorship (5:289-298). It was pointed out that individuals in different occupations varied in the period of acquiring ideologies.

E. C. Hughes (27). The attitude of the individual toward his occupation was classified as one of the units in the scheme for analysis of personality types as related to

the division of labor. Hughes theorized that the socialization of candidates of professions and near-professions required the "assimilation of the candidate to a set of professional attitudes and controls, a professional conscience and solidarity" (27:87). If Hughes was correct in theory, it would be expected that members within an occupation would have value patterns peculiar to that calling.

Other writers. Writers concerned with occupational attitude formation expressed views which substantiated Hughes' hypothesis. Caplow (12) devoted a section of the book, The Sociology of Work, to occupational attitudes. He speculated that entry into occupations required the assimilation of in-group behaviors both at the formal and informal levels.

Sorokin described the relationship of occupation to the behavior of the individual thus, "A durable occupational work molds the body, mind, and behavior of its members . . ." (57:211).

Occupational ideology of teaching. The work of W. W. Charters (14:715-813) was most comprehensive and elucidating regarding literature directed to the subject of the socialization process of teachers. The major contributions of research concerning the value orientations of teachers were summarized in the chapter titled "The Social Background of Teaching," which appeared in the Handbook of Research on Teaching (14). Among the individuals cited in

the chapter were Spindler (58), Sims (56), and Terrien (65), and studies emanating from the use of the Minnesota Teacher Inventory (17)(16).

The article by Spindler was theoretical in nature and represented effort to provide a framework for analysis of value orientations of individuals as related to American education. On the other hand, the research by Sims and the individuals engaged in the MTAI studies were empirical by comparison. However, the tenor of the articles reviewed seemed to indicate the existence of a teaching ideology.

Charters expressed his sentiments concerning the socialization of a teacher-to-be thus:

> From the perspective of adult socialization and role learning, the significant aspects of teacher-training programs lie not so much in the formal programs and practices as in the ideology and value systems to which the trainee is exposed, in the student's informal relations with his peers, and in those aspects of his institutional experience which usually are regarded as incidental to his training (14:750).

The review revealed the diversity of occupational orientations of teaching as related to attitudes and values. Simplistic explanations were considered to be unrealistic and far from the truth. The complexity of attitudes and values of teaching are evidenced by the many definitions of acceptable behavior described by educational philosophers.

A Review of Selected Literature Concerning the Measurement of Educational Philosophies of Students and Graduates in Industrial Arts Education

In recent years the quantity of philosophical studies in industrial education has increased proportionately in comparison to other types of studies. A sampling of the studies developed from a philosophical stance are the contributions to the literature by Ferns (63), Baird (3), Svendsen (61), and Stadt (59). A perusal of the literature of industrial arts education revealed two studies concerned specifically with measurement of philosophy of education. The more recent of the studies was listed by title with the notation that research was underway (50).

The Swanson study (62). The second study, the research undertaken by Swanson, was documented in the form of a doctoral dissertation. The investigation included (1) the development of an operational definition of two viewpoints of American education and (2) the categorization of graduate students majoring in industrial education according to responses to an inventory of educational viewpoints based upon the operational definition.

The design of Swanson's Inventory enabled the differentiation of viewpoints along a bi-polar continuum. The idealized ends of the continuum represented the essentialist and progressivist educational philosophies. A high-scaled

score in one direction was theorized to indicate an inclination of emphasis to a particular point of view.

Four general steps to fulfill the purposes of this original investigation were as follows:

> First, the literature dealing with teacher competencies, educational philosophy, and methods of attacking problems of this type was reviewed.
>
> Second, an operational definition of educational philosophy was proposed by listing teacher behavior implicit in educational philosophy. The definition was in outline form. The major headings listed five general activities of teachers as teachers. Under each major heading four sub-headings, representing levels of complexity of behavior, were listed. Under each sub-heading was listed a series of rather specific statements of teacher behavior hypothesized to be based in educational philosophy. Each of these statements was further defined by stating behaviors characteristic of the essentialist and progressive viewpoints. This operational definition was presented to a group of critics, nine teachers and graduate students in educational philosophy, for their evaluation of its completeness, accuracy, and appropriateness. The statements accepted by them constituted the criterion against which to judge teachers' educational philosophies, their extremeness and emphasis.
>
> Third, the writer prepared an instrument, an "Inventory of Viewpoints on Education," to measure the extremeness and emphases of teachers' educational philosophies. The inventory consisted of sixty-five pairs of statements of beliefs, opinions, and proposed actions based in educational philosophy. One statement of each pair generally represented the progressive viewpoint and the other the essentialist. Directions requested respondents to select the statement of each pair most in accord with their beliefs.
>
> Fourth, the inventory was administered to three hundred five graduate students in three colleges and universities. Various status facts were collected from each respondent such as highest degree held, major of each degree held, number of years of teaching experience, level of teaching experience, and type of position held. Relationships between the emphases and extremeness of the viewpoints expressed and the various status facts were investigated (62:128-29).

The following discussion is presented to further clarify the nature of the development of Swanson's research. The outline form which was used to describe the operational definition is illustrated as follows:

I. THE TEACHER FORMULATES OR SELECTS OBJECTIVES

A. He will apply the tenets of his educational philosophy to the problems of defining educational objectives.

Essentialist:
(1) Objectives will be relatively fixed.
(2) Objectives will be developed independent of experience.
(3) Objectives will be considered apart from the means of achieving them.

Progressive:
(1) Objectives must be constantly developing.
(2) Means must be considered as continuous with ends.
(3) Participants must have a voice in determining objectives (62: 152).

The outline form incorporated ideas developed by a number of persons. The teacher behaviors were formulated by Barr et al. (4). Categories of teacher behavior were:

1. The teacher formulates or selects objectives for teaching.
2. The teacher formulates experiences through which pupils will undergo as a means of achieving their objectives.
3. The teacher arranges for the pupils to have the experiences formulated in step 2.

4. The teacher evaluates pupils' growth and achievement of the objectives.

5. The teacher reappraises the objectives and experiences in light of the evaluations of pupil growth and achievement (4:238-263).

The sub-classifications under each of the general headings, in this case the five categories of teacher behavior, were statements based on four levels of a taxonomy of cognitive behavior developed by Bloom et al. (6). Swanson used the sub-headings of application, analysis, synthesis, and evaluation. The sub-headings of knowledge and comprehension of the Taxonomy were not used. In the example presented on the preceding page, the category used was that of application.

Following the description in terms of one of the categories developed by Bloom et al., the definition was extended to include statements based in metaphysics, epistemology, and ethics. The writings of Broudy (8), Brubacher (9), and Wild (69) provided the format for describing the statements on the three factors. The rationale for expressing the teacher behaviors on this basis was explained by Swanson thus:

> Many educational problems are capable of solution at some level other than the philosophical. Problems that cease to be controversial with the presence of objective scientific data are not philosophical problems. The teacher behaviors listed in this study were concerned only with behaviors finding their bases rather directly in educational philosophy and its disciplines, epistemology, metaphysics, and ethics (62:55).

The operational definitions were described in terms of implicit teacher behavior using two systems of philosophical positions. These were the essentialist and the progressivist positions. It was assumed in employing this classification that perennialism would be in the direction of essentialism and reconstructionism would be directed towards progressivism. Swanson rationalized his choice of classification in these words:

> Another reason for the choice of the familiar educational classifications of philosophy was that one of the eventual purposes of this study was to develop an instrument to enable a teacher to place himself along the continuum of philosophies of education. For this purpose it was desirable to obtain classifications offering a maximum contrast in position on a wide variety of educational issues. The essentialist-progressivist classification seemed to offer such a contrast.
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> . . . . . .
>
> It seemed, then, that the essentialist-progressivist classification served the purposes of this study best because it is a classification of <u>educational</u> philosophies (62:58-59).

The statements incorporated into the <u>Inventory of Viewpoints on Education</u>, the research instrument, were developed and selected from the outline. The instrument is included in the Appendix A1.

The instrument was administered to groups of graduate students from three institutions of higher education. Two of the conclusions of the study were:

1. It is possible to define educational philosophy in a practical and useful way by listing the teacher behaviors based in, and indicative of, educational philosophy. The educational philosophers cooperating in this study agreed rather closely on such a definition.

2. It is possible to differentiate individuals possessing essentialist and progressive philosophies by means of a written inventory based upon teacher behaviors implicit in educational philosophy (62: 130).

Included in the recommendations of the study were the following statements:

a. It is possible that the two philosophical positions used, essentialism and progressivism, are too narrow. Further study with other methods of classification may reveal more useful descriptions.

b. A different form of responding to the inventory, such as a free choice, may give scores capable of a different interpretation.

. . . . . .

f. This study dealt entirely with students at the graduate level. The value of the inventory for use with students at various undergraduate levels should be investigated (62:134).

The Swanson Inventory was administered to a group of teacher educators prior to the conference of the Mississippi Valley Association in 1955 (63). In the report made by Swanson and Micheels it was indicated that the responses of the sampling of teacher educators did not differ significantly from the responses made by the original sample of graduate students.

A Review of Selected Literature Concerning the Measurement of Educational Viewpoints Relevant to This Study

The review of literature included the following readings.

The Ryans study (55). The project by Ryans employed as part of the instrumentation the Educational Viewpoints Inquiry which was developed on the following rationale:

> Educational viewpoints quite reasonably are presumed to be important factors in determining what shall be taught in the schools of a particular community and how it shall be taught. The composite of educational viewpoints, or the "educational philosophy," accepted by an administrator and his supervisory and teaching staffs (presumably with approval of the school board and, in turn, the community) defines the objectives of teaching to which a school system is committed. The school system expects individual teachers to conduct their classes in keeping with such defined objectives.
>
> In practice, however, the educational viewpoints of an individual teacher may or may not conform to the objectives of the school system in which he is employed. Furthermore, because of lack of real understanding of the implications of viewpoints held, or inability to translate the viewpoints into classroom behavior (or perhaps because of external pressures), a teacher may not actually conduct his classes in keeping with the viewpoints he professes about educational matters. Nevertheless, one might expect a teacher committed to a particular set of educational viewpoints to behave differently in specified school situations from a teacher committed to some different educational viewpoint. Or, to put it briefly, it seems reasonable to assume that teacher behavior is influenced by the educational values held by the individual teacher (55:146-48).

The instrument was organized to enable factor analysis of cluster of statements based in educational thought. The items sampled viewpoints with respect to:

> . . . (a) curricular organization and scope; (b) course planning and classroom procedure (including pupil participation in these activities); (c) academic achievement standards; (d) division of teaching and administrative responsibilities; and (e) parent participation in the educational program (55:149).

In the summer of 1950 the instrument was administered to 213 elementary and 338 secondary teachers enrolled in institutions of higher education. It should be noted here that inventory forms were different for elementary and secondary school teachers; however, both tests were equivalent in scoring. Analysis revealed three general factors. These were (1) the academic-centered school program versus the school program stressing other objectives; (2) teacher-directed learning in traditional subject matter fields versus learning directed by pupil interests and abilities; and (3) rigid school programs versus flexible school programs (55:150-151).

Findings of the study are summarized as follows: (1) Secondary school teachers are more tradition-minded than elementary school teachers; (2) Secondary school teachers tended to be more subject-oriented, academic-centered, than elementary school teachers; (3) Secondary school teachers were less permissive than elementary school teachers; (4) Men teachers tended to be more traditional than female teachers; (5) Teachers at the secondary level with more than fifteen years of teaching experience tended to be more traditional (55:152).

The Bruce study (10). Bruce employed the instrument, "A Scale for Determining Teacher Beliefs," developed by Kreitlow and Drier (36) to ascertain consistency of educational viewpoints of education students at Wayne State

University in Detroit, Michigan. The instrument items represented the following viewpoints: (1) progressive, (2) community-centered, and (3) academic. It was noted that the progressive and community-centered points of view were difficult to differentiate.

An interesting finding by Bruce read: "Sophomores, juniors, and seniors were about equally inconsistent. At all three levels of development, students were so very inconsistent by these measures that it may be questioned whether they have any educational philosophies at all" (10:464).

The Ehrlich study (22). The study conducted by Ehrlich employed the forced-choice method for securing data on an instrument including statements from three philosophical positions. These positions were (1) essentialism, (2) perennialism, and (3) progressivism.

The findings claimed one-eighth of the teachers were not consistent in viewpoint selection (22:3684). Also Ehrlich noted that the majority of citizens, teachers, and students selected statements representative of the progressive view. As with most of the studies reviewed, it was noted that citizens and students were more prone to be inconsistent than teachers.

The Biggs study (7). The doctoral research undertaken by Biggs was postulated on three viewpoints of education. These were isolated to be (1) truth-centered, (2) individual-centered, and (3) society-centered. In respect

to educational philosophical positions, truth-centeredness would be similar to the realist position; the individual-centered position would be representative of the idealist position; and the society-centered position would be representative of the pragmatic or progressive viewpoint. Obviously, the isolated factors are not the definitions of the philosophic viewpoints discussed but resemble the listed views. The instrument developed for the study was called the Educational Viewpoints Inventory and consisted of 150 items.

The findings of the study were reported thus:

> The results indicated, first, adherents to the Individual Centered viewpoint do not tend to endorse dogmatic statements nor traditional attitude statements; also, they do not tend to endorse the role of "Referrer." Second, adherents to the Truth Centered viewpoint do not tend to endorse dogmatic statements; they do tend to endorse the role of "Disciplinarian" and reject the role of "Counselor." Third, adherents to the Society Centered viewpoint tend to endorse dogmatic statements, opinionated statements, and statements which are supported by rationalizations. In addition, they tend to endorse advice-giving and information-giving roles (7:3200).

The Prince studies (48) (49). The work of Prince found its basis in the writings of Spindler (58:145-156). The framework of research was based on the polar continuum, one end described by traditional values and the opposite extreme by emergent values. The instrument titled the Differential Values Inventory consisted of sixty-four forced-choice items. Items were developed over the following categories: "1) Puritan morality, 2) individualism,

3) work-success ethic, 4) future-time orientation . . ." (48:305) for the traditional pattern. The emergent pattern included the following categories: "1) relativistic moral attitudes, 2) conformity, 3) sociability, 4) present-time orientation" (48:305). The categories are similar to the list described by Spindler (58).

One of the findings was that value judgments differed significantly between individuals attending-teaching in religious and public schools (48:306-307). Prince also claimed that intraschool patterns did not vary between teachers, freshmen, and seniors. The interpretation given to this phenomenon was that institutions perpetuate particular value patterns among its members, both teachers and students, through a process of self-selection.

The Prince studies were similar to Swanson's study (62) in scoring. Thus, there was no provision in ascertaining whether individual beliefs and values might lie outside the continuum; nor does the instrument enable the investigator to identify individuals who may not have a consistent viewpoint.

The Pricert study (47). The study attempted by Pricert tested the hypothesis that students majoring in different disciplines would exhibit ethical and philosophical patterns which could be identified and isolated. The study was conducted on graduate students at the University of California at Berkeley. Students from the following

disciplines were studied: (1) physics, (2) sociology, (3) English, and (4) mathematics. The instruments employed in the study were: (1) an instrument concerning ethical attitudes based in three positions of philosophy and (2) the Test of Philosophical Attitudes by Lodge (39:337-341). The philosophic viewpoints sampled were idealism, realism, and pragmatism.

Pricert's findings led to the following conclusions:

1. Groups of student majors who participated in the exploratory study differed markedly in the amount of philosophical and ethical attitudes accepted in the tests.

2. Within groups of student majors who participated in the exploratory study, marked relationships existed in the amount of philosophical and ethical attitudes accepted in the tests.

3. For the total group of student majors who participated in the exploratory study, marked relationships existed in the amount of both philosophical and ethical attitudes accepted in the tests (47: 121).

The Kerlinger studies (32)(33)(34). A series of studies by Kerlinger and associates have claimed progressivism and traditionalism are basic educational attitudes. The technique used by Kerlinger was the Q-sort in ascertaining the results. More important, the advantage of the Q-methodology enables the isolation of inconsistent respondents, those individuals who may have had consistent attitudes.

Among his conclusions were:

> . . . the two studies seemed to identify two independent factors behind educational attitudes, "Progressivism" and "Traditionalism." It was also

found that the professors of the two samples, especially the education professors were mostly "progressive" and that the laymen were mostly "traditional." Further, the education professors were very consistent; they clearly differentiated between the restrictive-permissive dimensions of the studies, and they leaned rather strongly toward permissiveness. The liberal-arts professors, too, tended to differentiate these two dimensions in the permissive direction, if not so strongly as the education professors. The laymen chosen for the studies did not make this differentiation at all clearly; they tended to be inconsistent and mixed up in their educational attitudes.

These findings seem to indicate three important things. First, progressivism and traditionalism in education are "real" entities; they emerged as rather clear-cut factors in the statistical analysis of both studies. But they are also probably real in the practical sense that they influence behavior as educators and as laymen. More accurately, they are the action dispositions of philosophies of education.

. . . . . .

Second, if there is actually a large gap between educators and laymen in their attitudes toward education and, by implication, their knowledge of the facts and their recognition of assumptions, especially by laymen, then education is faced with a large communication problem.

. . . . . .

Finally, the problem of progressivism versus traditionalism, which we have talked about for so many years, should be carefully, objectively, and scientifically studied (32:90-91).

The Spindler formulation (58). The definitive formulation of American education on a traditional-emergent continuum of values was included in this section of the review because of the relevance of Spindler's theory to this investigation. It should be noted that Spindler did not test his theory; however, Prince (48), cited earlier in this chapter,

utilized Spindler's model to study administrators and students.

The model assumed that American society to be characterized as a culture in the process of transformation; and hence, American education was described in terms of "shifts in values" (58:132). In brief, the shift within American education was described within a framework of a polar-continuum, the ends being traditional and emergent values, with the movement in the direction towards the emergent values. Upon the traditional-emergent continuum the author theorized various segments of the population could be placed. The following diagram was used to illustrate the theory (58:139).

TRADITIONAL VALUES		EMERGENT VALUES	
General Public and Parents		School Administrators	Students
School Boards	Students	Older Teachers	Younger Teachers

The discussion accompanying the diagram read:

> School boards are placed nearest the traditional because such boards are usually composed of persons representing the power, status-quo, elements of the community, and of persons in the higher age ranges. They are therefore people who have a stake in keeping things as they are, who gained their successes within the framework of the traditional value system and consequently believe it to be good, and who, by virtue of their age, grew up and acquired their value sets during a period of time when American culture was presumably more tradition-oriented than it is today. They may be driven to extreme forms of traditionalism as a response to the pressures mentioned previously.

The general public and parent group, of course, contains many elements of varying value predilection. It is therefore unrealistic to place this public at any particular point in the value continuum. But I hypothesize that the public tends to be more conservative in its social philosophy than professional educators are. The placement to the left of center of the continuum takes on further validity if it is seen as a placement of that part of the public that is most vocal in its criticism of educators and education--since many of the criticisms made appear to spring out of value conflicts between traditionalist and emergentist positions. Parents complain that their children are not being taught the "three R's" (even when they are), that educators want to "socialize" the competitive system by eliminating report cards, that children are not taught the meaning of hard work. These all sound, irrespective of the question of their justification or lack of it, like traditionalist responses to change in an "emergent" direction.

Students are placed at two points on the transformation line because it is clear that those coming from traditionalist family environments will tend to hold traditionalist values, but hold them less securely than will their parents (if our hypothesis for overall change is valid), while other students who come from emergent-oriented families will tend to place even further, as a function of their age and peer groups, towards the emergent end of the line than their parents would. This is only partially true, indeed, for such a rationale does not account for the fact that offspring in revolt (and many American children from 6 to 16 are in a state of revolt against parental dictums) may go to extremes in either direction.

School administrators, older and younger teachers, place at varying points on the emergent half of the transformation line. I have placed them there because I believe that the professional education culture (every institution has its own way of life, in this sense) that they have acquired in the schools and colleges of education has a clear bias towards an emergent-oriented ethos. Many of my educationist colleagues will reject this interpretation, and indeed, such interpretations are always guilty of overgeneralization. My case must rest on contemporary educational philosophy, theory, and practice. The emphasis is on the "social adjustment" of the individual, upon his role as a member of the group and

community. Most of the values listed under the emergent heading are explicitly stated in educational literature as goals (58:139-141).

The traditional and emergent values of the polar ends of the continuum were defined thus (58:136-137):

TRADITIONAL VALUES	EMERGENT VALUES
Puritan morality (Respectability, thrift, self-denial, sexual constraint; a puritan is someone who can have anything he wants, as long as he doesn't enjoy it!)	Sociability (As described above, one should like people and get along well with them. Suspicion of solitary activities is characteristic.)
Work-success ethic (Successful people worked hard to become so. Anyone can get to the top if he tries hard enough. So people who are not successful are lazy, or stupid, or both. People must work desperately and continuously to convince themselves of their work.)	Relativistic moral attitude (Absolutes in right and wrong are questionable. Morality is what the group thinks is right. Shame, rather than guilt, is appropriate.)
Individualism (The individual is sacred, and always more important than the group. In one extreme form, the value sanctions egocentricity, expediency, and disregard for other people's rights. In its healthier form the value sanctions independence and originality.)	Consideration for others (Everything one does should be done with regard for others and their feelings. The individual has a built-in radar that alerts him to other's feelings. Tolerance for the other person's point of view and behaviors is regarded as desirable, so long as the harmony of the group is not disrupted.)
Achievement orientation (Success is a constant goal. There is no resting on past glories. If one makes $9,000 this year he must make $10,000 next year. Coupled with the work-success ethic, this value keeps people moving, and tense.	Hedonistic, present-time orientation (No one can tell what the future will hold, therefore one should enjoy the present--but within the limits of the well-rounded personality and group.)

TRADITIONAL VALUES	EMERGENT VALUES
Future-time orientation (The future, not the past, or even the present, is most important. Time is valuable and cannot be wasted. Present needs must be denied for satisfactions to be gained in the future.)	Conformity to the group (Implied in the other emergent values. Everything is relative to the group. Group harmony is the ultimate goal. Leadership consists of group-machinery lubrication.)

A Review of Studies and Literature Concerning Student Groups in College as Related to Attitudes and Values

Introduction. The review commenced with the reading of the Jacob Report (30) which raised more questions than answers. For example, a portion of his text read:

> American college students today tend to think alike, feel alike and behave alike. To an extraordinary degree, their values are the same wherever they may be studying and whatever the stage of their careers. The majority seem turned out of a common mold, so far as outlook on life and the standards of conduct are concerned (30:12).

However, Jacob made this somewhat contradictory remark elsewhere in the book:

> . . . But a look at whole college rather than just a selection of courses, or other educational influences in isolation, reveals that sometimes a combination of factors can produce a distinctive institutional atmosphere, a "climate of values," in which students are decisively influenced.
>
> The incoming student is quick to sense "what goes" on his particular campus. He tends to follow along in the groove he finds, and in short order the pattern of his beliefs and attitudes comes to bear the stamp of his institution. Individual differences varies from place to place. No doubt, institutional atmosphere is modified somewhat by the incoming flow of new students and the attitudes

> they bring with them. It isn't, in other words, a static phenomenon. But there is a self-perpetuating force at work also. Many students (or their parents) are attracted to a place whose atmosphere they expect to be congenial to their previous tastes (30:99).

The work by Eddy (21) supported in part the thesis of Jacob of the general conformity of college students in the United States. However, Eddy declared that differences might exist between students of the various campuses.

The Jacob report has been criticized by a number of persons. Reisman (51) in the American Sociological Review contended that Jacob's data was not differentiated sufficiently. Another criticism related to what Reisman described as a lack of emphasis in the report of two classic studies of student behavior. He was referring to the work of Newcomb (43) at Bennington and the Vassar studies (11). The criticism read:

> However, in Jacob's account these notable studies carry hardly more weight than those studies which make simplistic comparisons in terms of pen-and-pencil tests between students exposed and not exposed to a particular course in human relations. This may be one reason why his overall verdict as to the effectiveness of college is so bleak. It seems to me that the struggle which occurs in college between the efforts of some of the faculty to socialize the students into scholarship or some comparable ideal and the efforts of the rest of the culture (including much of the faculty) to use college as anticipatory socialization for middle class existence, cannot be understood purely in terms of the trajectory of individuals; sociological and anthropological concepts and methods are also required--concepts dealing with mutual acculturation, the formation of subcultures and reference groups, and the impact of mutual expectations and pluralistic ignorances (51:733).

The findings of Davis (19) did not support Jacob's contention of conformity among student bodies of colleges. His evidence indicated that an "intellectual climate" was more evident at some institutions than at others. The report of study was summarized:

1. High quality, private, small institutions, have proportions of seniors endorsing intellectual values, while lower quality, public and larger institutions have lower proportions. In addition technological schools are quite low in intellectual values.

2. The perceived value climate is directly related to the true value climate.

3. In terms of individual characteristics, students' perceptions of value climates are distorted toward their own value positions, and students with high grades tend to give lower estimates of the intellectuality of their campuses than students with poorer grades.

4. In terms of school characteristics, there is a regional differential in the proportion of schools whose climates are seen by the seniors to be more or less intellectual than the true value distributions would predict.

5. All these findings are interpreted in terms of the perceptual mechanisms of "assimilation" and "contrast" (19:128).

The initial phase of review was followed by readings of selected works in the study of college students' attitudes in terms of student subcultures. The study which seemed to be most often quoted was the work by Newcomb (43) conducted at Bennington College during the 1930's.

The Newcomb study. The question posed by the research read, "What kinds of personal characteristics, in any

student community, determine those social relationships which in turn lead to varying reactions to proposed social changes?" (43:12).

An important facet of the research endeavor was the study of the students in terms of the college community as a frame of reference (43:Chapter 7). The conclusions derived from the findings verified the hypothesis that students would tend to assimilate the patterns of behavior of the college community. The findings of the Newcomb study disclosed the (1) tendency of students to change attitudes to that of the prevailing culture of the community; (2) senior students as a group would express attitudes and behaviors which were closer to community norms than freshmen; (3) students designated by their peers as being leaders held views which were closer to the norms of the community; (4) attitude change was slightly related to courses of study; (5) students of higher socio-economic background tended to change more in values; and (6) student leaders tended to be quickly "sized-up" in terms of value orientations (43:146-151).

Newcomb summarized the study in these words:

> To recapitulate, precollege and college community influences conspire to phrase approved behaviors in terms of success in a very few areas. Individuals thus come to view themselves as community participants in terms of a very few roles. The possible degrees of success, particularly as self-viewed, are limited. Individuals distribute themselves among these limited roles not randomly, but in accordance with already existing and currently

> developing personality characteristics. These characteristics which determine which of the possible roles shall be played by the individual have here been referred to as personality patterns. It is the community role which mediates between social attitudes and other personality characteristics. It is the community's limitation of possible roles that results in a limited number of personality patterns--limited, that is, in respect to their significance in determining social attitudes (43: 168-169).

The view of campus as a culture (67). Like Newcomb the formulation by Trow was based upon peer relationships of students. The model developed by Trow defined four student subcultures which were named the collegiate, the academic, the vocational, and the nonconformist (67:106). The detailed descriptions of the four subcultures were as follows:

COLLEGIATE CULTURE

> The most widely held stereotype of "college life" pictures the "collegiate culture," a world of football, fraternities, and sororities, dates, cars and drinking, and campus fun. And a good deal of student life on many campuses revolves around the collegiate culture; it provides both substance for the stereotypes of movies and cartoons and models itself on those stereotypes. Teachers and courses and grades are in this picture, but somewhat dimly, in the background. The fraternities have to make their grade point average, students have to hit the books periodically if they are to get their diplomas, gestures have to be made to the adult world of courses and grades which provide the justification for the collegiate round. In content, this system of values and activities is not hostile to the colleges, to which, in fact, it generates strong loyalties and attachments. It is, however, indifferent and resistant to serious demands emanating from the faculty, or parts of it, for an involvement with ideas and issues over and above that required to gain the diploma. This culture is characteristically middle and upper middle class--it takes money and leisure to pursue the busy round of social activities--and flourishes on, though is by no

means confined to, the resident campuses of big state universities. Part-time work, intense vocational interest, an urban location, commuter students, all work against the full flowering of a collegiate subculture, as do student aspirations for graduate or professional school, or more generally, serious intellectual or professional interests on the part of students and faculty.

VOCATIONAL CULTURE

The countervailing forces of student poverty and vocationalism, on the one hand, and serious intellectual or academic interest on the other, are strong enough on many American campuses which differ in many other respects, to make the collegiate culture relatively weak. In the urban colleges which recruit the ambitious, mobility oriented sons and daughters of working and lower middle class homes, there is simply not enough time or money to support the expensive frivolities of the collegiate culture. To these students, many of them married, most of them working anywhere from 20 to 40 hours a week, college is largely "off-the-job training," an organization of courses and credits leading to a diploma and a better job than they could otherwise command. These students have very little attachment to the college where they buy their education somewhat as one buys groceries. But like the collegiate culture, these students, for whom college is an adjunct to the world of jobs, are also resistant to intellectual demands on them beyond what is required to pass the courses. To many of these hard-driven students, ideas and scholarship are as much a luxury (and distraction) as are sports and fraternities. If the symbol of the collegiate culture is the football and fraternity weekend, the symbol of this vocationally oriented college culture is the student placement office.

ACADEMIC CULTURE

Present on every college campus, although dominant on some while marginal and almost invisible on others, is the subculture of serious students, the academic culture. The essence of this system of values is its identification with the intellectual concerns of the serious faculty members. These are the students who work hard, get the best grades, but also talk about their course work outside of class and let the world

of ideas and knowledge reach them in ways that neither of the foregoing types do. Where participants in the collegiate subculture pursue fun, and the job-oriented pursue skills and a diploma, these students pursue knowledge; their symbols are the library and laboratory and seminar. If the faculty members who embody these values also represent the college as a whole, then this academic subculture is both identified with the college and involved with learning. For these students, their attachment to the college, which may be as strong as among the collegiate crowd, is to the institution which supports intellectual values and opportunities for learning; the emotional tie is through the faculty to the college, and through the friends of similar mind and temper made in college. This is the climate encouraged at the academically strongest colleges, and when colleges aim to upgrade themselves, it is the students already oriented in this direction whom they seek to recruit. The products of this culture are typically aiming at graduate and professional schools; it is not surprising that they identify so strongly with the faculty, and internalize the scholarly and scientific habits of mind and work as part of their anticipatory socialization to their future professional roles. These students are often oriented toward vocations, but not so directly or narrowly as are the lower and lower-middle class commuters who hold the "consumer-vocational" values described above; they choose "a basic general education and appreciation of ideas" more often than "provide vocational training" as the goal of education most important to them. (Goldsen, et al., 1960) In any case, it is not necessary to decide whether they are concerned with their studies more because of their career ambitions or for the sake of learning. The distinctive qualities of this group are (a) they are seriously involved in their course work beyond the minimum required for passing and graduation, and (b) they identify themselves with their college and its faculty.

NONCONFORMIST CULTURE

It is in this latter respect, identification with the college, that "nonconformist," "intellectual," "radical," "alienated" students differ from their serious academic classmates. Some kind of self-consciously nonconformist student subculture exists in many of the best small liberal arts colleges, and among the undergraduates in the leading universities.

> These students are often deeply involved with ideas, both the ideas they encounter in their classrooms, and those that are current in the wider society of adult art, literature, and politics. To a much greater degree than their academically oriented classmates, these students use off-campus groups and currents of thought as points of reference and criticism. The distinctive quality of this student style is a rather aggressive nonconformism, a critical detachment from the college they attend and its faculty (though this often conceals a strong ambivalence), and a generalized hostility to the college administration. The forms this type takes vary from campus to campus, but where it exists it has a visibility and influence far beyond its usually tiny and fluid "membership." Its chief significance is that it offers a genuine alternative (if only a temporary one) to the rebellious student seeking a distinctive identity in keeping with his own temperament and experience; in a sense it provides some intellectual content and meaning to the idealism and rebelliousness generated in adolescence in some parts of American society. Where the preceding three types of students pursue fun, a diploma, and knowledge respectively, these students pursue an identity, not as a byproduct but as the primary and often self-conscious aim of their education. And their symbol is a distinctive style--of dress, speech, attitude--that itself represents the identity they seek (67:107-110).

Trow suggested that some students manifested behavior in more than one culture. He contended that in most colleges and universities one or more of these generalized ideal cultures could be identified and indicated that in some schools one or more of the subcultures would be absent.

The Gottlieb-Hodgkins study (25). The Gottlieb-Hodgkins study utilized the idea of subcultures advanced by Trow (67). The study was conducted at a large midwestern state university where the possibility for the existence of the four subcultures was enhanced. The summary and discussion of the study was as follows:

> Our concern in this paper centers on the influence of the college community upon student attitudes and values. Working from the thesis that previous studies had tended to ignore the social diversity of the student population being studied, an alternative explanation was advanced utilizing the idea of student subcultures. Positing the college community as a unique sociocultural system existing with the larger American society with a distinctive value orientation, the development of student subcultures was explained as resulting from the interaction of this value orientation with those held by the student upon entrance to college. The social-psychological dynamics of the process were explained in terms of the individual's need for cognitive consistency. To the extent that this consistency was achieved through the process of alienation from a particular part of the college communities' value orientation, three subcultures evolved. A fourth subculture was identified that held a value orientation closely similar to that of the college community.
>
> To test the empirical validity of our theoretical construct and its usefulness in studying attitude change, a large sample of college students was given paper-and-pencil items designed to gain a measure of their social origins, their attitudes, and their academic performance, as well as an indication of their subcultural classification. Within the context of the theoretical framework developed, knowledge of previous research and logical reasoning led the authors to several expectations regarding the social composition, attitudes, attitude changes, and academic performance of the students in the subcultures identified. Generally, the stated expectations were met in the analysis of the data (25:285-286).

Riesman and Jencks (52). As part of a contribution of collected papers in the book titled The American College (52), David Riesman and Cristopher Jencks described various images of institutions of higher education. These images could be considered to be equivalent to the concept of student subcultures. The images described were the intellectual, romantic, vocational, and the imageless colleges. The intellectual image would correspond most closely with the

academic subculture as defined by Trow (67). The romantic image finds its counterpart in the collegiate subculture, and the vocational image corresponds to the vocational subculture.

The method suggested by Reisman and Jencks to study institutions was anthropological. Thus, first-hand experience within the college community being studied was considered to be invaluable. Their approach seemed to be premised on the belief that it was necessary to study the students at "first hand" before any explanation of the culture of the institution be made.

The Bushnell study (11). The anthropological approach in studying a college community was employed by Bushnell. The depth study of the college community was part of the Vassar studies (11). He concluded that there was a community culture at Vassar and that there were subgroups (subcultures) within the community culture. These were the equivalent to the types discussed by Trow. The subgroups were (1) "super intellectual"--academic subcultures, (2) "good-time Charlies"--collegiate subculture, (3) "bohemians" --nonconformists, and (4) the "normal group"--academic subculture (11:506-507).

The Hughes, Becker, and Greer study (28:515-530). This study is important in that a single vocational oriented group was studied. The conclusions pointed out that the

subculture developed by students provided group solidarity during the process of occupational training.

The Pace study (46). Pace in a comprehensive research studied a number of colleges and universities using the idea of environmental press as a facet of behavior formation. The four emphases of environmental press were (1) the intellectual, humanistic, esthetic and abbreviated IHE, (2) the friendly, group welfare--W, (3) the scientific independent--SI, and (4) the practical, status--PS.

One of the observations made by the author read, "Engineering, Education, Business, Nursing, and others (which include one group each in Pharmacy, Journalism, Home Economics, Industrial Arts, and Health and Physical Education) may be considered as vocational groups" (46:207). Thus, under two headings were teachers, especially potential industrial arts teachers, categorized as being members of the occupationally-oriented subculture.

The Earle study (20). This study conducted in England revealed the technical and the arts and crafts students in teacher education tended to participate in activities allied to their vocational choices. Earle noted such students in training preferred to engage in activities of their specialty rather than expand their interests in other areas. He surmised that such students were (1) more self sufficient, (2) more solitary, and (3) less stable and dominant in social relationships.

Other studies reviewed. A number of studies concerning student attitudes and values were reviewed to gain insights to the problem at hand. The work of Angell (1) in the 1920's revealed the problem of understanding student behavior is not a new concern. In fact, Angell's description of the types of college students were the (1) collegiate, (2) independent "barb," (3) the vocational-oriented, and (4) the academic student. These are similar to types described earlier.

Another study of interest was the report by D. L. Thistlethwaite (66) concerning college life upon students' aspirations. He concluded (1) that informal groups and roles play a very important part in attitude formation of students and (2) that seniors and juniors tended to participate in different subcultures on a peer level than freshmen and sophomores.

A study by Bidwell et al. (6) using Spindler's (58) semiprojective instrument disclosed some interesting results. The emergent students were typified as generalists, as participators in activities of an expressive nature, and inconsistent in terms of sequence of career performance. On the other hand, the traditional students were described as oriented towards specialization in academic studies, members of extracurricular activities which included athletics, politics, and student-service activities, and quite consistent in patterns of career performance. This study was

important to this investigator in that the thesis was similar to that proposed for this investigation.

Many other studies were reviewed and the major findings seemed to indicate the following:

1. Freshmen versus seniors: In most of the studies reviewed seniors tended to be less dogmatic and more liberal than freshmen (43)(2)(37).
2. Religion as a factor: In most of the studies the members of less fundamentalist religious sects were more liberal (37).
3. Socio-economic class: Studies indicated that students from the middle class and from classes at the lower economic levels tended to be more conservative than upper class students (43).
4. Vocationalism: Students from lower socio-economic classes tended to stress vocational goals more often than students from upper classes (43).

Summary of the Chapter

In review, the chapter was divided into four parts. The first part consisted of a review of selected literature concerning ideology of groups based on occupations. Many of the articles reviewed seemed to indicate that individuals will tend to assimilate attitudes peculiar to the occupation they are engaged in. A number of the articles studies were

directly related to the profession of teaching and the belief patterns of teachers.

The second and third parts of the chapter were devoted to the literature concerning the measurement of educational viewpoints. The study by Swanson (62) was found to be most appropriate for purposes of this study. Other attempts at measuring educational viewpoints were reviewed and Spindler's (58) formulation was found to be practical and relevant for this investigation.

Literature related to the effects of membership in various college groupings were reviewed in the last section. The articles reviewed in most instances projected the idea that grouping of students into various categories was feasible for research purposes. The formulation for research in the next chapter resulted from the literature reviewed.

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CHAPTER III

RESEARCH FRAMEWORK AND HYPOTHESES OF THE STUDY

Introduction

It is the intent of this chapter to present the theoretical construct and hypotheses of the study. Much of what is to follow is the synthesis of the material reviewed in the previous chapter. The hypotheses generated for this investigation will appear in two places. The first set of hypotheses will follow the discussion of the categorization of college students into the various student subcultures within the institution of higher education; the second set of hypotheses will be presented after the definitions of three educational viewpoints in terms of patterns are discussed.

The study was posited on the concepts that the campus is a community and that students comprise the membership in one or more subcultures within that social system. In the pages ahead an attempt will be made (1) to develop a research rationale from the ideas of (a) the campus as a community, (b) students as members of one or more subcultures within that system, and (c) teacher education students as members of the vocational subculture; and (2) to clarify

and justify the use of instruments based in educational viewpoints as a legitimate means to study a facet of student behavior, specifically the viewpoints of students majoring in industrial arts education. Educational viewpoints will be viewed as part of the ideology of the teaching occupation.

Campus as a Community

The idea that the campus as a community has been suggested by Newcomb (14), Pace (15), and Trow (19). As with other communities in an industrial society, the college community includes people who can be categorized into roles. In all college communities there are students and faculty; there is a smaller proportion of administrators, service personnel, and other "friends of the university." The proportion of administrators and service personnel in the college community depends upon the purposes and size of the academic community. In addition to the above mentioned groups, alumni, patrons, industries with vested interests, legislators, church groups, governmental agencies, foundations, and philanthropic individuals and organizations affect in varying degrees the operation and stance taken by the college community.

In most cases, the role of the faculty is different from that of the student. Students are "objects" of the socialization process and the faculty the "manipulators." However, as Newcomb (14) pointed out, a simplistic cause-

effect explanation cannot be given to the dynamics of student behavior in the college community. All students would develop into the image set forth by the faculty if it were all that simple. Yet, the facts indicate that students are different. The college community may be better understood as being a somewhat fluid social body comprised of faculty, students, and administrators with purposes sometimes at odds with the major goals of the institution.

The college community differs in respect to other types of communities in that the two most widely accepted goals are (1) to perpetuate knowledge and (2) to educate and/or train students. Obviously, the college community engages in activities which in some respects are similar to other types of communities. There are some similarities between college communities as well as differences in characteristics. A similar and dominant characteristic found in college communities is the existence of the group of individuals described as students.

Student Subcultures

In the preceding paragraphs, a subgroup within the college community was identified as the student population. Other subgroups having varying degrees of impact on the community were isolated and categorized as faculty, administration, alumni, service personnel, and patrons of the university. This discussion will be directed to student

subcultures within the college environment. As with the idea of the existence of student subcultures as part of the college community, subcultures exist for the forementioned groups. Such a view would enable research to be broadened in numerous directions and perhaps be more definitive. Also, a theoretical base from which to pursue research that would lend itself to comparisons and explanations of the collegiate culture would be thus established.

Student subcultures have been described by Trow (19), Reisman-Jencks (16), Pace (15), and Gottlieb-Hodgkins (8). From the review of literature, at least four student subcultures were identified. Using the classification devised by Trow (19), these were the academic, the collegiate, the vocational, and the non-conformist subcultures. A detailed description may be read on pages 35 to 40 in the review of literature. The academic subculture was defined to be that which was representative of <u>both</u> the faculty and serious-minded students. Stated differently, the models for behavior for members of the academic student subculture were the images portrayed by the faculty. Students in this subculture were described as holding values and attitudes which were in many ways congruent with the faculty. The emergence of student subcultures was explained in terms of "individual need for self-consistency" by Gottlieb and Hodgkins (8). The formation of other subcultures was explained thus:

> By decreasing the importance of the dissonant goals ascribed by the college, and by seeking support from his family and college peers with similar values as reinforcements of an existing value orientation, he alienates himself effectively from that aspect of the college orientation inconsistent with his own (8:271).

This view incorporated the dissonance theory developed by Festinger (3:73-80) to explain emergence of subcultures. It is the above explanation that underlies this particular research endeavor. It was theorized that the members of the vocational, collegiate, and nonconformist subcultures possessed values incongruent or dissonant with the major proportion of the faculty. However, faculties in specific colleges such as education, engineering, and medical schools were theorized to be oriented towards the vocational subculture by virtue of the expressed purpose of developing personnel for specific occupations.

Teaching as Vocational Subculture

The findings of Pace (15) and Earle (4) tend to substantiate the theory that teacher education students lean towards the vocational subculture. The emphases in teacher education programs on (1) the methodology of teaching, (2) the control of the teaching-learning process, and (3) the organizing of the classroom environment to facilitate learning would tend to promote the development of vocationalism at the expense of the academic style of life.

The dominance of the vocational subculture in teacher education is perhaps indicative of the values and attitudes that both faculty and students bring to the situation. The education faculty, who supposedly serve as models of behavior for students, are theorized to be primarily the products of teacher training programs where the emphasis has been on how to teach rather than research. It is also theorized that faculty in colleges of education have been recruited from institutions stressing teacher training rather than scholarly research. The faculties of similar teacher normal schools and colleges fit this pattern of recruitment more so than large universities. For this reason, it should follow that faculties in colleges of education ought to be less academic and more vocational-oriented than the faculties of liberal arts colleges. If the socialization process is, in fact, true, a very large percentage of the faculties in the various colleges of education should manifest behavior appropriate to the vocational subculture.

Second, the major purpose of colleges of education in most institutions of higher education is that of training teachers. This emphasis may work against the development of the academic subculture and perpetuate the vocational subculture. Obviously, in the larger universities, especially the state universities, the emphasis would be less vocational-oriented, but in the small schools emerging from the normal

school status the dominant subculture is oftentimes that of teacher preparation.

Third, students entering teacher education programs bring to the situation attitudes and values which lend themselves to the crystallization of the teacher-vocational subculture. Spindler (18) theorized that teachers-to-be have been nurtured in environments which are more tradition-oriented than the emergent-oriented value systems represented by colleges of education. Thus, he claimed, conflicts arise as to assimilating an ideology concerning educational practices and philosophy. It was contended that the tradition-oriented values characterized by the puritan ethic of success by hard work fosters the development of a student vocational subculture of teaching.

The economic situations in which many education students find themselves are not favorable for the development of the affluent collegiate subculture; and the middle class values held by such students tend to preclude the formation of the nonconformist subculture. This does not imply that all students enrolled in colleges of education are dedicated to the vocational culture. Some students rebel, explained by Gottlieb (8) in terms of dissonance, and transfer out of teacher preparation; others are selected out by the intricate process of occupational socialization; others adjust minimumly and gain positions at the periphery of acceptable

behavior; but the bulk of graduating seniors find the vocational culture suitable in terms of self-esteem.

It is theorized that more often than not the teaching-vocational subculture is a less likely threat to the values and attitudes that students bring with them. The values and attitudes of members of the various teacher preparation colleges, both faculty and students, complement each other and tend to provide and extend group solidarity in terms of occupations related to education.

Industrial Arts Education as Teaching-Vocational Subculture

The discussion to follow was posited on the speculation that teacher education students were attracted in large proportions to the teaching-vocational subculture. It was reasoned that students in industrial arts teacher preparation programs gravitated toward the same culture if the preceding assumption was "true." It was theorized that industrial arts teacher education programs tended to be more conducive to the development of a teacher-vocational subculture than other programs in teacher education.

Some of the reasons for this position, although no empirical evidence is as yet available, are as follows: First, the content of industrial arts as opposed to the professional education and general education courses may be characterized as occupationally derived. In many instances the "technical content" is similar to the body of knowledge

accumulated by the various skilled trades; and such bodies of knowledge are generally not associated with bodies of knowledge developed in academic settings. Thus, oftentimes theory has been given less emphasis than operations and processes of the trades and occupations in classroom presentations.

Second, historically, industrial arts education concerned itself with the psychomotor rather than the cognitive aspects of learning. This emphasis in "doing" at the expense of "thinking" processes is interpreted as contributing to the reinforcement of the vocational subculture. It is in this area that efforts are presently being made to derive a body of knowledge for the industrial arts as in the projects by the Stout and Ohio State University (5)(11).

Third, the faculty of industrial arts education programs have been inclined to be pragmatic--practical, experimental, and mechanical-oriented. Nelson (13) observed that outstanding industrial arts teachers, the source of teacher educators, were inclined to have interests closely related to teaching and technical work. Interest in pedagogy and technical work is not antithetical to the vocational subculture. On the contrary, it was surmised that industrial arts faculty members project images which are more directed towards the teaching-vocational subcultures than to the other student subcultures.

A perusal of Who's Who in Industrial Arts Teacher Education, 1953 (21), revealed a large number of members who had previous experience as skilled tradesmen or who had worked in industry for periods of time. Many of the leaders identified in Who's Who in Industrial Arts Teacher Education, 1953, sustained interest in technical areas by maintaining membership in various occupational associations and pursued hobbies related to the content of industrial arts.

Fourth, the student enrolled in industrial arts may be characterized as coming from the lower-middle and lower working classes. In all probability, a large proportion of industrial arts students are science-mechanical-oriented rather than verbal-idea-oriented. This point has been substantiated in part by the research by Nelson (13). He claimed that industrial arts students, when asked to select areas of teaching other than their major, were inclined to omit subjects such as English, history, and social studies, and preferred to pick subjects related to industrial arts--sciences and mathematics. It would seem likely that the socio-economic origins of potential industrial arts teachers impeded the cultivation of the "style of life" of the other student subcultures because of finances, values, and the press of the curriculum.

Finally, unlike other students majoring in secondary education with emphasis in areas such as English, physical sciences, languages, and history, the typical industrial

arts student devoted a large amount of time in a department isolated from the rest of the college community. Isolation in this form would tend to contribute to group identification on the basis of occupation, the teaching of industrial arts. Another related factor is the low status accorded to industrial arts in the college community which would further direct students to maintain self-esteem and group-solidarity by directing interpersonal relationships within the department of industrial education.

It is the investigator's contention that the preceding factors plus the professional education courses tend to solidify a teaching-vocational subculture for industrial arts students.

Educational Viewpoints as Occupational Ideology

In the previous paragraphs, argument was presented concerning industrial arts students as part of a teaching vocational subculture. On the basis of the review, it was also ascertained that a characteristic of an occupation was the formation and assimilation of an occupational ideology by aspirants to and members of a particular profession.

It is the view of this investigator that educational viewpoints form in part the ideology associated with the occupation of teaching, particularly in industrial arts teaching. From educational philosophy or philosophies the

teacher, it is hoped, finds justification and direction for his practices. Such concepts and theories as "child-centeredness," "subject-oriented," and "sequential learning" have been traced to philosophies of education.

Unlike some occupations, the range of acceptable occupational ideologies in education has been broad for teachers during the past twenty years. More often than not, teachers tend to select aspects from various points of view in order to develop an "eclectic" personal position. On the other hand, in the past fifty years there have been dominant viewpoints concerning education in America. For example, the tide of "instrumentalism" swept the country during the 1930's and 1940's, and the industrial arts literature of that period reflected this emphasis.

It is contended that industrial arts teachers have been inclined to justify practices in terms of educational philosophy, especially in terms of the point of view in vogue with educational leaders. It should be understood that the articulation of a point of view does not mean that "practices" are consistent with what is "preached"; nor does the articulation of a point of view for justification purposes of industrial arts programs mean that all members of the profession believe in, much less understand, the points of view advocated.

The theme of professionalism in thought and action in colleges of education are indicative of the presence of

an ideology. "Professional attire," the specification of dress becoming of a teacher, is but a symptom of values and attitudes of the teaching profession. A striking example of educational viewpoints as occupational ideology is the proliferation of career in teaching and social foundations courses, and the existence of various student clubs in education, all of which attempt to cultivate values and attitudes of "good teachers."

The growth in numbers of personnel within the colleges of education who are allocated time for the purpose of developing and clarifying definitions within the discipline of educational philosophy further strengthens the contention that educational viewpoints to be a part of the occupational ideology of teaching. If one of the criteria of occupational professionalism is the development of an ideology based in a sophisticated body of knowledge, this trend in education can be best viewed in the efforts of educational philosophers.

The Measurement of Educational Viewpoints

The selection of a means for measuring viewpoints of students enrolled in industrial arts teacher training was identified as the problem after theorizing educational viewpoints to be the ideology of teaching. The instrument based in philosophy of education and developed by Swanson (19) was selected for this study. The reasons for this choice are discussed below.

First, Swanson's instrument was derived from a definition of educational philosophies. Thus, the instrument was interpreted to be a measure of actions and outcomes representative of educational points of view. Second, the instrument developed by Swanson was designed for personnel in industrial education, which meant that items on the inventory would not have to be restructured. Third, the instrument was easy to administer and score; this feature was interpreted to mean that wider usage could be made by interested individuals.

Fourth, the schema of the instrument included the extremities of educational viewpoints found in American education. The work by Kneller (11) supports this position by his description of the idealized poles of thought in American education in terms of essentialism and progressivism. Fifth, the framework from which the instrumentation described by Swanson closely resembles the formulation by Spindler (18). Superimposing the essentialist-progressivist continuum on the traditionalist-emergentist formulation enables the researcher to state predictions concerning viewpoints of various segments of society. In this particular case using the essentialist (traditionalist)-progressivist (emergentist) continuum would facilitate the generating of directional hypotheses once the sample has been identified.

The measurement of viewpoints of education in terms of a continuum of essentialism-progressivism was thus selected to study the occupational ideology of teaching.

Categorization of Student Groups Into Student Subcultures

The classification of college groups into the various student subcultures was made to further refine the investigation. At this stage of the investigation the sample, in this particular case the students in the industrial arts program at Oswego, was identified. Various clubs and organizations found on the campus were categorized into the subcultures defined by Trow (21). This procedure was employed for the following reasons.

It was theorized that the hypotheses concerning membership-nonmembership within the vocational subculture would show differences from the application of the instruments as the operational definition was vocational-oriented. It was recognized that the instruments might or might not differentiate membership-nonmembership in groups of the other subcultures. There exists one view that attitudes and values are general patterns of behavior which ought to result in differentiation regardless of the type of subculture under study. On the other hand, as the instruments were vocational-oriented and developed from an operational definition of educational philosophy, it could be argued

that the instruments would not be sensitive in differentiating differences of membership-nonmembership of groups in the other subcultures. The basis for this view is that in a complex industrial society individuals play many roles and keep such attitudes and values for the various roles separated.

The classification of college groups was judged arbitrarily as to the various subcultures. Groups were classified into the collegiate, academic, nonconformist, and vocational subcultures. In this investigation, most of the college clubs were categorized into the collegiate subculture with a few organizations classified into the academic subculture. The absence of nonconformist groups was theorized to be related to the type of college under study. Oswego College was essentially a teacher-training institution catering to students from social classes considered to be more tradition-oriented. Furthermore, the conservative nature of the college environment tended to select out students deviating from the norms of behavior becoming of future teachers.

The clubs, organizations, and factors believed to fall within the vocational subculture were: (1) the senior-freshmen factor, (2) the generalist-specialist factor with emphasis of program within the field of study of industrial arts, (3) membership-nonmembership in professional industrial arts teaching organizations, and (4) membership-

nonmembership in honorary industrial arts organizations. The generalist-specialist factor as used in this study referred to generalists: those individuals majoring in industrial arts who did not concentrate in a particular area of study. For example, a generalist would tend to follow a curriculum in which emphasis was placed on the study area such as ceramics, transportation, metals, electricity, woods, and drawing, with not much study in depth in any one of the above.

The generalist-specialist factor as used in this study referred to specialists: those individuals who indicated preference in studying one or two areas in depth. For example, the specialist would tend to follow a pattern in curriculum which would allow him to take many courses in a selected area such as woods and omitting other areas of study. The specialist expects to teach in his specialty area, in this case woods, after graduation and does not intend to teach in a situation in which the approach to industrial arts courses finds the teacher organizing a class from a number of areas such as woods, metals, electricity, ceramics, and drawing.

For purposes of this study the four subcultures were collapsed into two categories. These were the vocational subculture and the nonvocational subculture. Clubs and organizations classified in the academic, nonconformist, and collegiate subcultures were considered to be nonvocational.

The subcultures were collapsed into two categories because the study intended to test the hypothesis concerning educational viewpoints as vocational ideology. Secondly, if educational viewpoints differentiated between members-nonmembers of nonvocational and vocational clubs and organizations, it would mean that viewpoints of education are of generalized nature. Third, if educational viewpoints did not differentiate between the factors of membership-nonmembership in vocational-oriented groups but differentiated membership-nonmembership of nonvocational groups, it would provide evidence that such viewpoints were not a part of the ideology of teaching.

Hypotheses of the Study

Vocational Subculture. Hypotheses generated of factors related to the vocational subculture of teaching are as follows:

Hypothesis 1:

> Senior students who have finished practice teaching will tend to be more "progressive-oriented" than Others when the sample includes only industrial arts majors.
>
> Rationale: The senior-Other classification should produce differences in educational viewpoints as the seniors are nearing the end of the initiation period before being accepted into the occupation. The direction of differences was based upon the continuum described by Spindler (18) and the results gained by Swanson (19).

Hypothesis 2:

Students intending to become general industrial arts teachers tend to respond towards the progressive end of the continuum in larger proportions than students who perceive themselves as specialists or single content area teachers.

Rationale: This hypothesis was based on the common belief that specialists, especially in subject matter areas, are less "progressive" than the generalists. The generalists in industrial arts have been associated with ideas such as creativity, problem-solving, etc., whereas the specialists have been considered as subject-oriented teachers.

Hypothesis 3:

Members of industrial arts clubs which are organized to foster interest and ideals of the occupation will tend to be more progressive in outlook than nonmembers.

Rationale: This hypothesis was developed on the assumption that students in the process of training who actively participate in activities sanctioned by the occupation will tend to manifest behavior of that group. Thus, it was speculated that such individuals would be more alike in viewpoints with practicing teachers than students who did not hold membership in professional clubs.

Hypothesis 4:

Members of honorary clubs in the field of education and industrial arts will tend to be more progressive in educational viewpoints than nonmembers.

Rationale: The members of honorary clubs are usually chosen on the basis of a high degree of accomplishment in the field of education. These students represent the elite of those seeking entrance into the occupation of teaching. It was theorized that such students would manifest behavior which would be closer to the models of conduct valued by those in the profession.

Other subcultures. The hypotheses concerning factors relating to other subcultures were developed for the following reason: The decision was made to include hypotheses based in factors related to the other subcultures to ascertain whether the instruments would differentiate students on the basis of membership-nonmembership. It was theorized that the instruments would be measuring the general attitudes and values in terms of an operational definition if the instruments differentiated students on the basis of the description given above. On the other hand, nondifferentiation of students would tend to reinforce the claim that attitude and values are perhaps different for the various roles played by individuals.

The hypotheses generated were:

Hypothesis 5:

> Noncommuters will tend to be more progressive than commuters in response to the Swanson's Inventory of viewpoints.
>
> Rationale: It was theorized that commuting students tend to belong to social classes that view college education as vocational training. More important, such students have less opportunity to share ideas with their peers in the college environment and perhaps change their attitudes.

Hypothesis 6:

> Veterans will tend to be more progressive than nonveterans in educational outlook.
>
> Rationale: A number of studies have shown veteran students to be more open-minded than nonveteran students. A number of reasons have

been advanced to account for the differences; however, as yet a definitive explanation has not been accepted as universal.

Hypothesis 7:

Nontransfer students will tend to be more progressive in viewpoints than transfer students enrolled in industrial arts.

Rationale: Nontransfer students would tend to be more progressive because of their longer tenure on the campus. It was felt that such students would have had greater opportunity in terms of the time factor to assimilate the behavior of the culture.

Hypothesis 8:

Nonmembers of clubs and activities will tend to be more progressive in educational viewpoints than members of such organizations.

Rationale: This hypothesis was formulated on the assumption that students who joined clubs are those who (1) have a lot of free time or (2) find it necessary to maintain self-esteem by being involved in activities. The latter reason seems more plausible in this situation. It should be pointed out that the gravitation to activities may be in part a symptom of the inability of the industrial arts curriculum to provide sufficient visibility for all students.

Hypothesis 9:

Students with membership in special interest organizations will tend to be less progressive in viewpoint than nonmembers.

Rationale: it was theorized that the dissonance factor (9) was operative to a greater degree among students who were members of special interest clubs than nonmembers. It was speculated that students who did not hold membership were more involved with activities and schoolwork of the industrial arts curriculum.

Hypothesis 10:

Students engaged in intercollegiate athletics will tend to be less progressive in educational viewpoint than nonparticipants.

Rationale: It was felt that students who engaged in college athletics had less time to spend in activities, especially extracurricular, of the industrial arts area. Second, such students would by nature of the activity of athletics be subjected to influences involving directive-oriented individuals.

Hypothesis 11:

Nonmembers of musical organizations will tend to be more progressive in educational viewpoint than participants.

Rationale: Members of musical clubs in this particular study were required to work in a group and to discipline themselves in the endeavor. It was speculated that membership in such groups would necessitate high degree of directive relationships to produce the sounds, etc.

Hypothesis 12:

Members of art-oriented clubs will tend to be more progressive in viewpoint than nonmembers.

Rationale: This hypothesis was generated on the basis that the faculty connected with the art organizations tended to express views which were progressive in nature. Thus, it was theorized that students attracted to such programs and clubs would hold similar views.

Hypothesis 13:

Members of religious organizations will tend to be less progressive in viewpoints than nonmembers.

Rationale: The basis for this hypothesis comes from the theory that individuals who are more religious tend to be more traditional in outlook. It was felt that students who

sought membership in religious clubs on a college campus were more committed to religion than nonmembers.

Hypothesis 14:

Members of service clubs will tend to be more progressive in viewpoint than nonmembers.

Rationale: It was the opinion of this investigator that members of service clubs would be more progressive than nonmembers for the following reason: Service clubs tend to be people-oriented which would lead one to believe that emergent values would be dominant among the members.

Hypothesis 15:

Members of fraternities and other social clubs will tend to be less progressive in viewpoint than nonmembers.

Rationale: This position was taken in view of the writings which indicated that fraternity membership was in large measure a part of the collegiate subculture. It was theorized that nonmembers would expend more energy in their studies, in this case the industrial arts curricular offerings, and thus be less prone to deviate in behavior in the vocational subculture of teaching.

Hypothesis 16:

Members of student publications activities will tend to be more progressive in viewpoint than nonmembers.

Rationale: The hypothesis was generated on the assumption that students interested in journalism tend to be liberals.

Hypothesis 17:

Members of student government will tend to be more progressive in viewpoint than nonmembers.

Rationale: The hypothesis as stated is somewhat contrary to literature reviewed. However,

it was felt that students of Oswego in student government were the leaders in scholastic pursuits; hence, these individuals would have also been high achievers in the education-dominated curriculum.

Hypothesis 18:

Nonmembers (nonparticipants) in intramural athletics will tend to be more progressive in viewpoint than members.

Rationale: Participants in intramural athletics were considered to be less closely associated with industrial arts activities on the basis of the dissonance theory.

Hypothesis 19:

Members of other organizations will tend to be less progressive than nonmembers.

Rationale: Same reason as Hypothesis 8.

Hypothesis 20:

Members of off-campus clubs and activities will tend to be less progressive than nonmembers.

Rationale: It was speculated that students who elected to continue participating in off-campus activities would be less prone to change behavior in terms of viewpoints. In fact, membership in off-campus activities implies that the student has not cut his precollege ties.

Patterns of Educational Viewpoint

Criticism of preceding formulation. The hypotheses formulated in the preceding pages were based on the assumption that all individuals reacting to an instrument to measure viewpoints of education would distribute themselves along the essentialist-progressivist continuum. Swanson's

Inventory, the primary instrument for gathering data from which analysis of the hypotheses were made, was designed to measure the relative direction and intensity of viewpoints of students and teachers. As was pointed out earlier, a "more progressive" group would be characterized by scores which tended to be closer to the progressive extremity. The reverse would be indicative of the "more essentialist" students. This technique was believed to be adequate to fulfill the requirements and purposes of testing the stated hypotheses.

However, criticism of the approach employed was made from the following observation. The results of past applications of the instrument revealed that a majority of the scores fell about the mid-range of the continuum. This phenomenon was disturbing in that the claim could be made that those who scored around the mid-range were "inconsistent." Further, the instrument developed by Swanson was not designed to ascertain whether an individual scoring midway between the extremes was inconsistent or consistent. Thus, a theoretical framework and a mode of analysis were developed for possible study of the groups on the basis of defined response patterns.

Three Patterns of Educational Viewpoint

For purposes of this study three viewpoints of education considered to be consistent were identified. These points of view were (1) progressivism, (2) essentialism, and (3) logical empiricism. In order to minimize discussion to the essential features of the study the three positions will be described briefly over the operational teacher behaviors utilized by Swanson.

Essentialism and progressivism. This section will be presented in the form of a summary of the two viewpoints, essentialism and progressivism, as described by Swanson (18). The descriptions of the two positions will be written over selected teacher behaviors plus the definition of the basis of knowledge for each viewpoint.

Definition of the basis of knowledge:

1. Essentialist: Knowledge is thought of as a revelation of the essentials. It is not a creation but a revelation of the absolute, the essential. Truth is tested in terms of its conformance to reality. Knowledge is internally consistent (18:150).

2. Progressivist: Truth is made by the process of verification. It is dynamic and specific, rather than stable and general. Reality exists in communication. Information is differentiated from knowledge. Information becomes knowledge when it is judged relevant to the solution of a problem and this judgment is verified (18:151).

Description of the behavior: The teacher formulates or selects objectives (18:152).

1. Essentialist: The objectives will be viewed as fixed, absolute, and stable. Aims of education will include those objectives which are fundamental and enduring. Objectives will be selected on the basis of expert opinion, and thus, student participation in the formulation of educational aims is of no consequence (18:152-156).

2. Progressivist: The objectives will be viewed as constantly developing, and means and ends are to be considered as an emerging process. Students and teachers ought to participate in the development of objectives. Whereas the essentialist position stresses goals in terms of the future, the progressivist is concerned with proximate goals (18:152-156).

Description of the behavior: The teacher formulates or selects experiences which will facilitate the achievement of the objectives of education (18:156).

1. Essentialist: The curriculum will reflect the view that content and subject matter be basic and same for all people. Content for courses will be selected by experts, and children's interests will have little influence in the selection of content (18:156-160).

2. Progressivist: The experiences will be chosen to meet the changing conditions of society. The curriculum will be developed to accommodate the differences in student interests and abilities. The value of courses will be measured in terms of relevance of the material as viewed by the learner (18:156-160).

Description of behavior: The teacher arranges for the pupils to have the educational experiences leading to the accomplishment of the objectives (18:160).

1. Essentialist: The organization of the experience will stem from the logic of the content. The teacher will be viewed as a dispenser of facts and the method employed will be to facilitate the learning of fundamentals. Interest of the subject will occur concurrently or after learning takes place (18:160-165).

2. Progressivist: Experiences will be organized to accommodate for individual differences. Emphasis will be placed on the development of skills to solve problems and to view knowledge in terms of testable hypotheses. The teacher's role will be that of guide rather than dispenser of facts (18:160-165).

Description of behavior: The teacher evaluates pupils' growth toward the objectives of education (18:165).

1. Essentialist: In the evaluation of student growth the aim will be to measure the possession of facts. The technique employed will attempt to quantify growth. Standards will be fixed and specific items will reflect the facts related to the fundamentals learned. Tests will indicate the level of competence of the student against the fixed norms (18:165-169).

2. Progressivist: The evaluation will tend to be subjective and a cooperative venture between student and teacher. Standards will be developed for each individual. Items in tests will reflect an instrumental view of knowledge. Essay tests with emphasis on application will be used more often than recall or standardized tests (18:165-169).

Description of behaviors: The teacher reappraises objectives, experiences, and his educational philosophy in the light of pupils' growth (18:169).

1. Essentialist: Essentials and/or fundamentals are to be changed if original knowledge was incorrect. Failure on part of students to grasp essentials would necessitate the changing of methods but not content (18:169-172).

2. Progressivist: The content should reflect a changing view of knowledge. Experiences which students do not comprehend should be deleted and meaningful experiences inserted into the program. The educational process should enable students to better cope with their environment (18:169-170).

Logical empiricism. The definition of the third viewpoint was developed after examining the results of previous applications of Swanson's Inventory. It was noticed that the distribution of scores centered about the mid-range of the essentialist-progressivist continuum and for this reason a criterion for the selection of a third viewpoint was one which tended to express a position midway between the two poles. The viewpoint advocated by logical empiricists was felt to fit best the above criterion. Feigl gave some indication as to this moderate and definite position thus:

> From the trial-and-error aspect of learning we derive the philosophical lesson that learning is most effective if we avoid the extremes of both the complete rigidity of dogmatism and the utter fluidity of skepticism. Only the golden mean of the critical attitude will, in the long run, produce the best adaptations (6:309).

The definitions to follow will be written over the same teacher behaviors as was done earlier with the exception of evaluation of the total educational mission. Many of the ideas presented may be found in the writings of Feigl (6)(7).

Definition of the basis of knowledge:

> Logical empiricist: ". . . cautiously works with the truths that are sufficiently confirmed by the testimony of experience and calls into serious doubt only those which are poorly confirmed. But even the best generalizations are held valid only 'until further notice'; they are kept open for revision in principle, no matter how firmly we may rely upon them until such revision is forced upon us" (6:309). This view tends to be relativistic in attitude toward knowledge but with a commitment

to a theory on the basis of the "best available evidence" at the operational level. Such a view does not succumb to the pitfalls of absolutism nor the aimlessness of extreme relativism.

Logical empiricists differ from progressivists in that the logical structure and empirical validation are the bases from which knowledge is defined. The progressivists will tend to base knowledge from a psychological point of view (7:339). Feigl stated the difference thus:

> However, Logical Empiricism as an approach in the theory of knowledge is primarily concerned with cognitive meanings. It avoids the errors of the psychologistic approach by the sharp distinction between the pictorial connotations of words, i.e., the imagery that accompanies their use, the syntactical-semantical rules that govern their use (7:331).

Logical empiricists differ from essentialists concerning essentialists by ". . . repudiating the existence of synthetic a priori knowledge" (7:339).

The emphasis in the study of knowledge from the point of view of logical empiricism is centered primarily in the cognitive meanings of language as differentiated from the noncognitive meanings. The process and procedures employed in making truth claims are viewed as being important as the "end" or the object of the confirmation process. Explanations as well as description of "how things behave" becomes an aim of logical analysis (7:349).

This position has contributed to methods in the clarification of ideas and concepts. Precision and objectivity in thought are earmarks of the endeavors of logical empiricists.

Description of behavior: The teacher formulates or selects objectives (18:152).

Logical empiricist: The basis for action stems from taking a position at a given time although from the statement made above the logical empiricist does consider changing objectives when the evidence or situation warrants such a decision. This means that individual teachers will formulate and/or select objectives which can be tested or have been tested and which have

been found to be relevant to the society at a given time. The selection of objectives will be made on what is considered the best evidence available using the techniques and procedures found to be most appropriate.

Unlike the progressivists, students need not be participating members in the formulation of aims and objectives; the difference between the logical empiricist and the essentialist lies in the attitude toward absoluteness and the enduring qualities of aims and objectives of education, with the former groups refuting such notions. The logical empiricist, sometimes called the scientific humanist (6:331), concerns himself with objectives that will further develop the rational and scientific attitudes of students (6:335-336).

Operationally, the empiricist probably would have experts develop the aims and objectives of education with evaluation and restatement of such goals by responsible and reputable individuals. Reliance on tested and relevant procedures in ascertaining appropriateness of educational goals and objectives reinforces the claim for the employment of experts to formulate educational policy and aims.

Description of behavior: The teacher formulates or selects experiences which will facilitate the achievement of the objectives of education (18:165).

Logical empiricism: Conceptual development is the major objective of this point of view. The experiences selected to facilitate the effecting of the educational objectives will stem from the study of the conceptual structure developed by experts from various disciplines. The teacher will attempt to select experiences which will enable students to understand the importance of science, the methods employed in science, and the attitude embraced by the movement of the advocates of the unity of science. Experiences will be organized around the concepts and content defined to be relevant by experts. Method of instruction is viewed as being distinct from the concepts and content of the course.

A common core of general studies will underlie the educational program. These studies will include both the cognitive and non-cognitive study of human experience (6:331). Effort will be made by the teacher to

differentiate the kinds of confirmation techniques used in establishing truths-claims for the various categories of meanings concerning knowledge. A common core of experiences will be built around the sciences (cognitive) and the arts and humanities (non-cognitive).

Special vocational programs will be built around the core of general studies (6:339).

One of the features of the logical empiricist's solution concerning experiences is the theme to unify the concepts from the various disciplines. Attempts will be made at various stages of the educational process to enable students to cross discipline lines to develop an awareness of common features between the various fields of study (6:339-340).

The curriculum innovations described by Bruner (1) in the report of the Woods Hole Conference approaches the point of view of the logical empiricists.

Description of behavior: The teacher arranges for the pupils to have the educational experiences leading to the accomplishment of the objectives (18:156).

Logical empiricism: The content of courses will be logically derived and tested empirically before organized for the teaching situation whenever possible. The methods employed in the teaching-learning situation will attempt to "aid and encourage students to rediscover for themselves some of the simpler and basic facts of modern science" (6:337). The classroom experience will include learning by participation as well as certain amounts of disciplined action on the intellectual level (6:337).

The content at a particular grade level will be organized to facilitate learning at the maturity levels of students. Like the progressivists the logical empiricist attempts to make learning an enjoyable experience. Feigl stated the sentiment thus:

> It is my impression that the teaching of science could be made ever so much more attractive, enjoyable, and generally profitable by the sort of approach that is more frequently practiced in the arts and the humanities (6:337).

The experiences in the classroom situation will be structured to enable students to differentiate methods of verifying the various types of information. Studies will include experiences in the study of evaluative procedure concerning ethical decisions.

While the content of courses will more often than not be developed by experts representing various disciplines, the teacher will have available a number of alternative methods to effect the goals of teaching to accommodate for differences in students, teachers, and environment.

The theory of learning girding the position is based on the work of scientists who view learning as some form of stimuli-response. The concept of reinforcement is one of theories subscribed by the logical empiricist (6:309).

The ideals of scientific-humanism will prevail in the environment of the classroom. Technological innovations will characterize the teaching environment, especially those which have been logically developed and empirically tested. Reading sources will be developed to emphasize the unity of science.

Another area of emphasis will be in languages. Effort will be made to enable students to express ideas with clarity and precision.

Description of behavior: The teacher evaluates pupils' growth toward the objectives of education (18:165).

Logical empiricism: Evaluations will be in the form of measuring growth in terms of possession and understandings of scientific procedures and concepts. Attempts will be made to evaluate cognitive behavior using logical and tested procedures. If at all possible, evaluation will be quantitative.

Subjective judgments will be made in the event that evidence suggests objective means of evaluation are not yet available. Students will be evaluated to ascertain the degree to which they have "fuller understanding of the techniques of observation, definition, explanation, and interpretation" (6:337) of modern science.

The results of evaluation may be used to counsel students, to change the method and techniques of teaching, to restructure the learning environment to accommodate

for differences in pupils, and to evaluate the effectiveness of the teacher.

Unlike the progressivists, the logical empiricists will attempt to measure quantitatively as many aspects of growth in the cognitive domain as possible. He differs from the essentialist in that he views the evaluative process of affective (emotive) aspects of human endeavor as being subjective and not absolute. Thus, the logical empiricist varies the evaluative procedure and techniques depending upon the verifiability of the experience. The results of evaluation will tend to be reported in terms of probabilities. The cognitive evaluations will tend to be described with greater probability figures than noncognitive evaluations, if noncognitive evaluations were to be reported in the manner described above.

The operational procedure may be in the form of objective and subjective tests for evaluative purposes. In The Taxonomy of Educational Objectives as developed by Bloom et al. (20) a degree represents efforts that would be acceptable to logical empiricists.

The definitions presented were aimed at articulating a definite position somewhat between essentialism and progressivism. This third viewpoint of education was theorized to be the position held by logical empiricists. Thus, the behaviors were described in the terms of solutions or alternatives an empiricist would probably choose. Detailed discussion concerning the view proposed by the logical empiricists was not set forth because the intent was to formulate an operational definition over selected teacher behaviors. However, the work by scholars in form of the Minnesota Studies in the Philosophy of Science, Volume I (12) is recommended for those needing elaboration of the point of view used as the basis of the third position.

Patterns of viewpoints: A summary of three positions in terms of specific alternatives. In the preceding pages, operational definitions were discussed in terms of teacher behaviors for three educational positions based in philosophy. The summary to follow attempts to simplify the patterns based from the definitions.

In terms of teacher behaviors:

I. Concerning knowledge:

   A. as being relative and emerging. The progressivist and logical empiricist would by definition select this view.

   B. as being absolute, eternal, and fixed. The essentialist by definition would be party to this viewpoint.

II. Concerning educational aims and objectives:

   A. as relative and changing. Both progressivist and logical empiricist would subscribe to this view. However, the logical empiricist would contend that because decisions have to be made to actuate an objective, the operational aims may be fixed at a given time.

   B. as absolute, fixed, and enduring. The essentialist by definition would select this view.

III. Concerning the formulation and selection of experiences to achieve objectives:

   A. as determined by cooperative efforts of teachers, students, and other interested individuals. The progressivist would be more prone to accept this view.

   B. as determined by experts from the disciplines. The essentialist and logical empiricist would foster such views. The logical empiricist would tend to have experts develop the curriculum and test such material for the classroom experience. (Note: The logical empiricist may have teachers and other qualified individuals cooperatively develop the curriculum.)

IV. Concerning the arrangement for pupils to have educational experiences:

A_1 with the view that the teacher is a disseminator of information. Both the essentialist and logical empiricist fit this point of view. The logical empiricist would perceive the teacher's role as a dispenser of selected basic information affecting the objectives of fundamental learning on the part of the student.

B_1 with the view that the teacher is a guide and partner in the educational endeavor. Both the progressive and logical empiricist fit this category. The logical empiricist would perceive the teacher's role as including some of the suggested practices of the progressivists especially in the development of the more sophisticated aspects of the cognitive domain. Example: The development of problem solving ability.

A_2 with the view of learning as being characterized by exercise, discipline, and drill. The essentialist would by definition select this view of learning. The logical empiricist would arrange some experiences from this stance. Logical empiricists would believe that some discipline and exercise are necessary to learn the fundamentals.

B_2 with the view of learning as being one of solving problems. The progressivist and logical empiricist would be in agreement that learning is in part enhanced by the ability to solve problems. The progressivist would make the development of such skills an objective. The logical empiricist would say that after the basics have been developed, the problem-solving abilities of students should be challenged.

V. Concerning the evaluation of pupil growth toward the objectives:

A. with the view that tests will be characterized by the measurement of facts and skills objectively. The essentialist and logical empiricist would by definition find this view compatible. The logical empiricist would propose that quantitative tests be used wherever possible.

B. with the view that tests will be characterized by the student's perception of the problem and solutions. The progressivist and logical empiricist would probably suggest the use of subjective evaluative methods. The logical empiricist would use such tests to ascertain the ability to synthesize, create, and reformulate solutions using subjective methods. The logical empiricist would use such evaluative procedures in areas such as aesthetics and ethical problems.

From the brief summary it should be evident that students reacting toward the patterns of the essentialists and progressivists by definition ought to react to only one of the alternatives for each of the behaviors presented. On the other hand, it was speculated that the patterns of logical empiricism would be one of selecting a specific position concerning the behaviors of knowledge and of educational aims and objectives, and at the same time being ambivalent, depending on the situation for the alternatives of the other teacher behaviors.

Unclassified patterns. Response configurations which did not coincide with the defined alternatives presented in the preceding pages were categorized as "unclassified." This group included response patterns which were (1) inconsistent, and (2) representative of possible consistent points of view which were not defined.

Hypotheses Derived From Educational Viewpoints Inventory Patterns

The hypotheses generated from the definition of viewpoint patterns controlled the factor of class in college, the senior-other delineation. The hypotheses were stated in the following form:

Progressivist Patterns: Hypothesis 21.

> The proportion of progressivist-oriented seniors is significantly larger than progressivist Others.
>
> Rationale: The reasoning which decided the formulation of the hypothesis as stated was similar to the rationale used to justify the first hypothesis, Hypothesis 1. Seniors theoretically would be more progressive because this is the position advocated by the industrial arts teacher educators.

Logical Empiricist Patterns: Hypothesis 22.

> The proportion of logical empiricist-oriented seniors is significantly larger than logical empiricist Others.
>
> Rationale: It was theorized that senior students would have had more opportunity to move in the direction of progressivism and, thus, a larger proportion of students would have developed viewpoints in the logical empiricist-oriented range of predicted patterns.

Subtests of Hypothesis 22: Two subhypotheses were formulated concerning the logical empiricist patterns.

a. Statement of subhypothesis: The proportion of logical empiricist-oriented seniors with predictable patterns is significantly larger than the proportion of Other logical empiricists with predictable patterns.

   Rationale: The investigator theorized that seniors would tend to score in configurations which were predicted more often than Other students. Predicted patterns were selected because such patterns deviated less from the progressive pattern and it was

speculated that logical empiricists would more often follow one of the predicted logical empiricists patterns than other possible patterns.

b. Statement of subhypothesis: The proportion of Other logical empiricists with less predictable patterns is significantly larger than the proportion of senior logical empiricists with similar patterns.

Rationale: It was theorized that students of the Other category would select patterns which were more remote from the defined progressive pattern. Such "less predictable" patterns were thought less likely to be selected by students near completion of the teacher training program. The assumption was made that students closer to being formally initiated into the occupation would be more articulate and possess views which were defined as closely related to a position.

Essentialist Patterns: Hypothesis 23.

The proportion of Other students with essentialist patterns is significantly larger than the proportion of senior students with the same views.

Rationale: The position of essentialism was felt to be less in keeping with the image in terms of viewpoints of the occupation. Thus, it was speculated that students closest to acceptance into the occupation of industrial arts teaching would not find such a viewpoint as occupational ideology. In view of the research by Swanson (18) the probability of students, both seniors and Others, selecting this viewpoint did not seem promising in testing this particular hypothesis.

Unclassified Patterns: Hypothesis 24.

The proportion of Other students with unclassified viewpoints is larger than the proportion of senior students classified the same.

Rationale: This hypothesis was stated as such on the basis that students categorized as Others ought to be more likely to have larger proportions with viewpoints which would fall outside the defined patterns. It was speculated that students at the initial stages of training would manifest viewpoints more likely to be inconsistent.

Subtests controlling other factors. Extensive subtests were not planned for this particular aspect of this phase of the study was to be developmental in nature. However, subtests of senior and Others were made controlling the factor of transfer-nontransfer. The results of the subtests are discussed in Chapter V. All tested subhypotheses were evolved from the statements of hypotheses made in the preceding paragraphs.

Summary of the Chapter

In review, the text of this chapter attempted to explain the basic premise upon which the research was conducted. The discussion began by forwarding the theory that the academic environment was a community encompassing a number of subcultures. Further, it was argued that students enrolled in industrial arts teacher education programs are members of the vocational student subculture. The evidence for advancing the preceding position was not made from scientifically derived data; instead the assumption was made by speculating from the results of readings concerning the characteristics of members in the occupation, the methods of training, and the body of knowledge associated with the occupation.

The discussion then attempted to portray the relationship of educational viewpoints as being part of the occupational ideology of teaching. Reasons for selecting

Swanson's Inventory were discussed and the classification of student clubs into the vocational and nonvocational subcultures followed.

A total of twenty hypotheses were developed for the initial phase, Phase I, of the study. These included four hypotheses to test the idea that educational viewpoints could be used as a measure of the assimilation of occupational ideology by students in industrial arts teacher preparation programs. Sixteen hypotheses were developed to check whether an inventory of educational viewpoints could differentiate membership-nonmembership in activities classified in nonvocational student subcultures.

The second phase, Phase II, was prompted on the realization of definite disadvantages for interpretive purposes of the technique employed by the first phase. Four classifications of educational viewpoints were identified in terms of patterns and were categorized (1) progressivism, (2) essentialism, (3) logical empiricism, and (4) an unclassified category. Four hypotheses were developed for this exploratory phase of the study. Basically, the hypotheses contended that students closest to being accepted formally into the occupation would manifest patterns of viewpoints resembling members in the occupation. On the other hand, it was theorized that freshmen and new transfer students beginning the process of being socialized into the occupation would tend to be more confused and distant in ideology than seniors.

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CHAPTER IV

INSTRUMENTS, THE SAMPLE, AND COLLECTION OF DATA

Introduction

The statement of hypotheses was followed by the selection of two instruments. The major instrument selected to provide data for testing hypotheses 1 to 20 was Swanson's Inventory. The Educational Viewpoints Inventory developed by this investigator was employed to study hypotheses 21 to 24.

Swanson's Inventory

General description. The Inventory of Viewpoints of Education, Form A. Swanson's Inventory was the primary instrument of the study. This inventory consisted of sixty-five paired statements of educational situations and courses of action based in the progressivist and essentialist philosophies of education.

Statements for the sixty-five items were derived from operational definitions of what were considered to be two extreme philosophical points of view written over teacher behaviors. These behaviors as reported by Barr et al. (1) were described:

1. The teacher formulates or selects objectives for teaching.

2. The teacher formulates experiences through which pupils will undergo as a means of achieving their objectives.

3. The teacher arranges for the pupils to have the experiences formulated in step 2.

4. The teacher evaluates pupil growth and achievement of the objectives.

5. The teacher reappraises the objectives and experiences in light of the evaluations of pupil growth and achievement (1:238-269).

The instrument used in the study was reproduced from the original. See Appendix A1.

Method of scoring. The scoring of the instrument was made by awarding one point for each progressivist item chosen and zero points for each essentialist item chosen. It was thus possible to score 65 points (progressivist) or zero points (essentialist). This instrument could be classified as a forced-choice inventory. It was necessary for each respondent to make a choice on all sixty-five items. The total score derived in the manner described was thought to be indicative of a relative position on a bi-polar continuum of educational philosophy.

Reliability. In the original study Swanson computed coefficients of consistency by the analysis of variance technique developed by Hoyt (5:153-160). The results of Swanson's calculations revealed the following coefficients of consistency between items:

1. $r_{tt} = .75$ for 125 Industrial Education and Home Economics graduate students at Stout State College.
2. $r_{tt} = .73$ for 103 graduate students in the College of Education, University of Minnesota.
3. $r_{tt} = .72$ for 77 Industrial Education graduate students at the University of Missouri.
4. $r_{tt} = .71$ for 305 graduate students at three colleges and universities (13:110).

A second type of reliability coefficient was computed by Swanson. A coefficient of equivalence was computed for a group of respondents by the test-retest method. A coefficient r of .711 was derived by applying the Pearson Product-Moment formula (3:110). However, no generalizations were made concerning the significance of the coefficient of equivalence as the sample did not meet the criterion of being randomly selected.

During the process of conducting this investigation no attempt was made to check and to extend the reliability studies made by Swanson. Instead, the outcomes of the original work were assumed to be adequate for purposes of this investigation.

Relevance. The validity of the instrument was claimed on the premise of logical relevance. Swanson's evidence of relevance was based on two considerations: (1) the care evidenced in the operational definition of educational philosophy prepared by the writer (Swanson) and

evaluated by the critics, and (2) the closeness of agreement between the behaviors specified in the operational definition and the behaviors called for in the inventory (13:100-101).

A detailed discussion of the nature of logical relevance was presented by Cureton (8). The claim of relevance by Swanson met the specifications described by Cureton as follows: "The statement [the definition] must imply unambiguously or specify an area of behavior that is operationally definable, operationally observable, and operationally scorable" (8:650).

Educational Viewpoints Inventory

Need for second instrument. In addition to having some means to gather data for the testing of the stated hypotheses, the employing of Swanson's Inventory was intended to effect the purpose of extending the study of viewpoints to an undergraduate sample. It may be said that such a course of action could be described as a replication study, the reuse of an instrument for research purposes. A second cluster of hypotheses centered on the idea of identifying patterns of responses concerning viewpoints of education.

The Inventory developed by Swanson was based on different assumptions and this was inadequate for the task of identifying patterns of responses. It was necessary to

develop a second instrument which (1) would be related to Swanson's Inventory in some respects and (2) would enable the identification of the patterns defined in the previous chapter. The patterns of viewpoints were: progressivist, logical empiricist, essentialist, and the unclassified group.

General description of the instrument. The Inventory developed for this study incorporated most of the features described by Osgood et al. (9). In brief this instrument was premised on the logic of the Semantic Differential which was explained as follows:

> We begin by postulating a Semantic space, a region of some unknown dimensionality and Euclidian in character. Each semantic scale, defined by a pair of polar (opposite-in-meaning) adjectives, is assumed to represent a straight line function that passes through the origin of this space, and a sample of such scales then represents a multidimensional space. The larger or more representative the sample, the better defined is the space as a whole.
>
> . . . . . .
>
> What is mean by "differentiating" the meaning of a concept? When a subject judges a concept against a series of scales, e.g.,
>
> FATHER
>
> happy___:___:___:___:___:___:___:___:sad
> hard___:___:___:___:___:___:___:___:soft
> slow___:___:___:___:___:___:___:___:fast, etc.,
>
> each judgment represents a selection among a set of given alternatives and serves to localize the concept as a point in the semantic space. The larger the number of scales and the more representative the selection of these scales, the more valid does this point in the space represent the operational meaning of the concept. And conversely, of course: Given the location of such a point in the space, the original judgments are reproducible in that each point has an orthogonal projection onto any line that passes through the origin of the

> space, i.e., we mean the successive allocation of a concept to a point in the multidimensional semantic space by selection from among a set of given scaled semantic alternatives. Difference in the meaning between two concepts is then merely a function of the differences in their respective allocation within the same space, i.e., it is a function of the multidimensional distance between the two points (9:25-26).

As with other inventories and testing devices of this variety there are some weaknesses both in the instrument and the theoretical base from which the inventory was derived. A critical account of the instrument was presented by Remmers (10:334-339, 360-363) in a chapter devoted to the review of rating methods of teachers' educational research.

The instrument developed for this particular study consisted of items (concepts) representing educational practices or ideas which were found to be related by definition to one of the two educational points of view described by Swanson. Bi-polar scales were written over each item. The instrument consisted of six items representing a point of view; ten bi-polar scales written over each item; and the patterns of viewpoints were determined on the basis of the total configuration of six signs, + or -, for each item determined from the scores of the ten scales.

Two forms of the Inventory were developed. Form A was used in this study. The difference between Form A and Form B is that the items are the counterparts in description of the concept as defined in the operational definition. Both forms of the Inventory are included in the Appendix A3 and A4.

Items used in the Inventory. The items used in the Inventory were modifications from the form suggested by Osgood. The teacher behaviors were employed as criteria from which items were selected, except in one case where the item was chosen on the basis of a definition basic to a philosophical position. Listed below are the items in the manner of appearance on the instrument:

Form A and Form B (Form B items in parentheses)

1.	In my opinion: Knowledge is	EVOLVING AND EMERGING (ABSOLUTE AND ETERNAL)
2.	In my opinion: Educational Aims	REACTIVE AND CHANGING (FIXED AND ETERNAL)
3.	In my opinion: Course Material Organized by	PUPIL AND INSTRUCTOR (EXPERT PROFESSOR)
4.	In my opinion: Learning is a Process of	EXERCISE, DRILL, AND DISCIPLINE (IDENTIFYING PROBLEMS)
5.	In my opinion: The Teachers' Primary Duty is	EXPLANATION OF SUBJECT (GUIDING STUDENTS)
6.	In my opinion: Tests that are	STANDARDIZED AND OBJECTIVE (PRACTICAL AND SUBJECTIVE)

Item one (1) concerning knowledge was derived from the definition of the epistemological theses, EVOLVING AND EMERGING representing the pragmatic view and ABSOLUTE AND ETERNAL being indicative of the essentialist pole. It was assumed that a program of teacher education would have as an objective the development of a consistent educational philosophy on the part of each student. For this reason the item

concerning a definition of knowledge was included as an item although the listed teaching behaviors did not include it specifically.

The item which refers to educational aims was based in the behavior of "formulating or selects objectives of learning" (13:54). Item three was thought to be closely related to the definition of teaching behavior concerning "formulating of experiences" (13:54); and item four was chosen to be representative of the behavior in which the "teacher arranges for the pupil's experiences" (13:54). Item five was also thought to be related to the behavior of arranging for pupils' experiences. Item six was felt to be indicative of the behavior of evaluation.

Unlike the manner in which concepts are differentiated in the Semantic Differential, this study used a statement which was open-ended. However, precaution was taken to keep syntax simple so as not to contaminate the descriptive words representing the viewpoint on each item. Below each set of descriptive words was a short phrase representing the opposite viewpoint. The descriptive words to be differentiated and the short phrase of the opposite viewpoint are presented in the following example:

In my opinion: Knowledge is	EVOLVING AND EMERGING (As opposed to: Absolute and Eternal)

It was felt that this information would enable the respondents to make more precise judgments on the items.

The second specification used in making decisions concerning the feasibility and appropriateness of an item was the requirement that items be representative of relative positions on a polar scale, one extreme being abstract and the other operational. Items related to "knowledge" and "Educational aims" were considered to be relatively more abstract than other items. The items designated to be less abstract than the preceding two items were related to "the development of course material" and "the process of learning." The remaining two items, "teacher's primary duty" and "tests," were considered more operational than the other items. The preceding statements did not imply that overlapping did not occur between items concerning positions on a continuum and that one item was more or less abstract than another item as viewed by all individuals.

The grounds for a course of action of item selection described above was the commitment to identify patterns of educational viewpoints. Progressivist and essentialist-oriented individuals would be identified by consistent-directional responses to the various items. Logical empiricist-oriented students were to be identified on the basis of responses to specific items. From the definition of logical empiricism presented earlier it was expected that the patterns would show more affinity toward progressivism on the abstract items and essentialism on the operational items. In summary, items were selected to enable the

identification of individuals with patterns oriented to the progressivist, logical empiricist, and essentialist views of education. The remaining students with undefined patterns were categorized as "unclassified."

Scales. In each form of the inventory six items were used. Ten scales were written over each item. Scales were selected from the list appearing on pages 53 to 61 in the research report concerning the Semantic Differential (9:53-61). Further breakdown was made in the following manner:

Of the ten scales for each item (9:62-63):

a. three scales represented the factor of Activity, defined by Osgood et al. (9:62-63);

b. three scales represented the factor of Potency; and

c. four scales represented the factor of Evaluation.

The scales used in this study were isolated into the three factors by research associates of Osgood from a sampling of descriptive pairs of words from Roget's Thesaurus (9:47). The logic underlying the use of scales representative of the three factors was the belief that the semantic space would be more fully defined by measuring the meaning of a concept on a number of dimensions rather than a single dimension. The bi-polar adjectives incorporated in this study were selected on these criteria: (1) clarity of meaning of the polar adjectives and (2) the appropriateness of the adjectives to the items used in the inventory.

The former criterion was applied by subjecting a number of scales to a pilot group. Scales with confusing meanings and polar adjectives which were not a part of the vocabulary of students were deleted.

The discrepancy of four evaluative scales compared to three scales for each of the other two factors was the result of a decision to award the evaluative factor a larger proportion of the total score and to structure the number of scales for each item in a manner that would facilitate computing average item scores.

Listed below are the scales by factor and the frequency of use in each form of the instrument.

Evaluative Factor	Frequency
1. Good-Bad	6
2. Superior-Inferior	4
3. Unsuccessful-Successful	1
4. Wise-Unwise	2
5. True-False	1
6. Educated-Ignorant	3
7. Disreputable-Reputable	2
8. Right-Wrong	1
9. Wise-Foolish	2
10. Harmful-Beneficial	2

Potency Factor	Frequency
1. Weak-Strong	4
2. Potent-Important	5
3. Free-Constrained	3
4. Vigorous-Feeble	4
5. Prohibitive-Permissive	2

Activity Factor	Frequency
1. Active-Passive	6
2. Complex-Simple	3
3. Motivated-Aimless	5
4. Difficult-Easy	1

Activity Factor (Continued)	Frequency
5. Energetic-Inert	1
6. Intentional-Unintentional . . .	1
7. Moving-Still	1

Scales used more frequently than others were inserted into the instrument on the basis of the research report that such scales tended to have more consistent factor loadings (9:62-63). Some scales were reversed in the inventory to discourage inattentive marking of scales. Actual scales may be seen in the Appendix, under the heading Viewpoint Inventory, Form A and Form B.

Scoring. Every respondent was directed to mark an X in a space on each of the ten scales that best described the items. Directions for self-administering the inventory and descriptions of the various spaces on the continuum were part of the information on the cover sheet of the instrument. See Appendix A3 for description.

Each set of polar adjectives was placed at the extremities of a continuum divided into seven equal spaces. The seven spaces, the scaled portion of the inventory, are shown in the following sample.

ITEM A

Good 1 : 2 : 3 : 4 : 5 : 6 : 7 Bad

The numbers which appear in the example did not appear on the scales used in the instruments. Spaces were designated points from one to seven and were allocated thus:

A. Evaluative Scales: Numbering proceeded from either the extreme right or left end describing the favorable meaning, e.g., good, beneficial, etc., with the larger number or points awarded to the opposite extreme.

B. Potency Scales: Allocations of points originated from the potent end of the continuum, e.g., potent, strong, etc., and terminated with a possible seven points in the space adjoining the adjective at the opposite extreme.

C. Activity Scales: The origination of points for the spaces was at the active end of the scale, e.g., active, complex, etc., and seven points were awarded to respondents marking the other extreme.

The example illustrated in the preceding paragraph shows the sequential nature of point allocation to the spaces.

The procedure for scoring was facilitated by employing transparent keys made by the Thermofax method of reproduction. Reversed scales were scored in the same operation by using the scoring device. Separate keys were made for each of the three factors. This was done to build into the scoring procedure some means by which a study of factor loadings in items might be pursued. The determination of individual total scores on the inventory was accomplished in the following manner.

1. Sum all scores on evaluative scales for each item. Repeat for every item.

2. Sum all scores on potency scales for each item. Repeat for every item.

3. Sum all scores on activity scales for each item. Repeat for every item.

4. Convert scores of essentialist items, of which there were three in number, to reciprocal progressive score for each factor. See Appendix A5 titled Conversion Table.

5. Sum scores of three factors for each item. Repeat for every item.

6. Sum the six item scores. The resultant total is the inventory total score.

This procedure was used to compile (1) item scores, (2) factor scores, and (3) inventory total scores.

Patterns of viewpoints. Raw scores were designated in two categories, + and -, in order to identify patterns of viewpoints. All item scores equal to forty points or below were assigned a minus sign, -, and scores of forty-one or more were symbolized as plus scores, +. The minus sign meant that the total item score was in the progressive direction; a plus sign indicated the essentialist viewpoint.

The designation of a + or - to an item and the fact that the inventory consisted of six items were interpreted to mean that a pattern for an individual could take the form of one of sixty-four alternatives. Patterns were isolated for the various viewpoints by subjecting the operational definitions to each item. Itemized below are the patterns for the various viewpoints.

A. Progressivist-oriented viewpoint: Only one of sixty-four possible patterns met the specifications of the operational definition. The progressivist pattern required all signs for the items to be minuses. For example:

	Item number for progressivist pattern:					
	1	2	3	4	5	6
Signs:	−	−	−	−	−	−

Any deviation from the pattern described above would have been inconsistent with the operational definition.

B. Essentialist-oriented pattern: The essentialist pattern required all signs to be pluses. Only one of sixty-four possible patterns fit the essentialist definition. The essentialist position was similar to the progressivist viewpoint in terms of numbers of patterns describing the position. An example of the pattern is as follows:

	Item number for essentialist pattern:					
	1	2	3	4	5	6
Signs:	+	+	+	+	+	+

C. Logical empiricist-oriented pattern: Fifteen possible patterns were selected to be representative of the logical empiricist pattern. The patterns were chosen on the following conditions:

1. All logical empiricist-oriented patterns would have minus signs on the item concerning "knowledge." This meant item number one for all logical empiricist-oriented patterns would have a - sign.
2. All logical empiricist-oriented patterns would have minus signs on the item concerning "aims of education." This meant item number five for all logical empiricist patterns would have a - sign.
3. All other items in any of the fifteen patterns could be + or -.

The conditions stated were based on the operational definition. Since "knowledge" and "aims" were defined as being relative and emerging, the decision was made to have these items marked with minus signs. At the level of operation the signs were allowed to be + or - according to the definition stated earlier. However, it was theorized that frequencies of patterns marked with a plus (+) sign would be large for the item concerning the concept describing the development of course material. The same prediction was made with patterns marked with a plus for the item regarding testing. The basis for this prediction was made in view of the emphasis in recent educational practice. Further, in both the preceding predictions the number of plus signs

would be few within a pattern, no more than two plus signs per pattern.

Listed below are the fifteen possible logical empiricist-oriented patterns; asterisks mark those patterns which were predicted to receive high frequencies.

	Item number					
Logical empiricist patterns:	1	2	3	4	5	6
1*	-	-	+	-	-	-
2	-	+	-	-	-	-
3*	-	-	-	+	-	-
4	-	-	-	-	-	+
5*	-	+	+	-	-	-
6*	-	-	+	+	-	-
7*	-	-	-	+	-	+
8*	-	+	-	+	-	-
9	-	+	-	-	-	+
10	-	-	+	-	-	+
11	-	-	+	+	-	+
12	-	+	+	+	-	-
13	-	+	-	+	-	+
14	-	+	+	-	-	+
15	-	+	+	+	-	+

D. Unclassified viewpoints: Patterns which did not conform to the specifications set forth in the preceding discussion were assigned the unclassified

category. No prediction was made as to how and what the patterns of the unclassified group would be. However, it was intended in the analysis of the data to study the group in terms of frequency.

Reliability. Reliability of the instrument was determined using two approaches:

A. Hoyt (6:756-758): The initial program was planned to ascertain a reliability coefficient regarding the consistency of items. The method employed was Hoyt's Analysis of Variance Technique for unlimited scoring (6:756-758). This technique was a modification of an earlier method of analysis of variance developed by Hoyt for estimating test reliability (5:154-156).

The form from which r_{tt} was computed is illustrated in Table 1 (6).

Table 1. Hoyt's test for reliability of total score

Among individuals	k - 1	A	A'
Among items	n - 1	B	B'
Residual	(k - 1)(n - 1)	C	C'
Total	kn - 1	T	T'

$$r_{tt} = \frac{A' - C'}{A'}$$

$$SE_{measurement} = \sqrt{nC'}$$

Interpretation of the coefficient of correlation, r_{tt}, assumed that reliable tests would have r_{tt}s approaching 1.00 and inconsistent tests would have r_{tt}s that approached .00. It was predicted that the r_{tt} of this inventory would not be extremely high, the .80 - .99 range; nor would the coefficient be extremely low, the .00 - .29 range. The reasons for theorizing a coefficient in the mid-range if .40 - .60 was deduced from the manner in which the instrument was intended to function.

The reasons were: (1) Progressivists, logical empiricists, and essentialists would have patterns which would indicate item differentiation of rather consistent nature. The resulting coefficient of this group would tend to raise the coefficient. And (2) on the other hand, the proportion of unclassified students would have the opposite effect. The fact is that this phase of the study was premised on the idea that there <u>is</u> a segment of the population with viewpoints that would seem inconsistent in view of the operational definition. This group would tend to contribute a larger proportion of the residual sum of squares in the analysis of variance which in turn would lower the r_{tt}.

B. Osgood (9): The second method of studying the reliability of the inventory was introduced by Osgood. The method was described thus:

3. Probability limits. Perhaps the most useful way of treating out test-retest data is in terms of the number of responses which yield absolute deviations of each given magnitude. If a subject-item matrix is formed and the cells of this matrix are filled with the obtained absolute deviations of each subject on each item, the number of instances of each size deviation may be counted. If subjects and items are considered to be representative, then statements regarding the probability of obtaining deviations of certain size can be made (9:132).

Table 2 illustrates the form used by Osgood to convey reliability in terms of probability limits. Osgood interpreted the results on Table 2 with the following discussion:

> The last column gives the proportion of time that a deviation can be expected if subjects and items are chosen at random. The values in this column correspond to confidence levels; they are a gauge of the degree of confidence with which an investigator can conclude that a given change on an item is significant. Thus, a change of greater than two units on the average scale by the average subject would be expected to occur less than 5 per cent of the time by chance (or as a result of random errors of measurement) (9:132).

Table 2. Probability of obtaining given deviations from test to retest (date from Factor Analysis I, 40 items)*

Absolute Deviation	Per Cent of Responses	Probability of Obtaining a Deviation Equal To or Greater than Given Deviation
0	54.0	1.000
1	32.6	.460
2	8.6	.134
3	3.1	.048
4	1.1	.018
5	.4	.006
6	.2	.002

*(9:132).

For purposes of this investigation the format used by Osgood was employed. Whereas Osgood described probability in integers of whole deviations, the plan for this study was to describe per cent of responses and probability at .5 deviations. Also, the report of the reliability in terms of probability was developed to include the data from the first three deviations and to exclude the figures for the remaining three deviations, although the scales of the inventory were structured in a manner allowing a maximum change of six deviations.

The following types of test-retest comparisons were made:

I. Item probability

a. Test-retest between identical forms:

1) Initial test (0) vs. nine weeks later (A)

2) Initial test (0) vs. ten weeks later (B)

3) A vs. B

b. Alternate form:

1) Alternate form (C) vs. 0, ten weeks

2) Alternate form (C) vs. A, one week

3) Alternate form (C) vs. B, one hour

c. Comparisons between Group I consisting of the average probabilities from tests between the Initial test (0) and A, B, C. Group II consisting of the average probabilities after summing the results of comparisons between A vs. B, B vs. C, and A vs. C.

Tests for factor loading were made on each of the three factors using the same format described above. The results of the reliability studies on the basis of probability were considered exploratory and developmental rather than a source from which to make generalizations. A small N was chosen for the study with selection based on favoring the research in terms of error. This meant that the sampling was selected from a group which theoretically had a larger proportion of unclassified students.

Validity. The claim for validity was similar to that which was discussed for Swanson's Instrument. Relevance of this instrument to the operational definition was the extent to which the items used in the inventory were representative of the definitions.

Activities Profile Sheet

A form was developed to gather data about the respondents. The information asked is outlined below and a replica has been placed in Appendix A. Each student filled in a data sheet prior to responding to the inventories. The sheets had spaces for:

I. Name

II. Date

III. Information

A. Class in college

B. Transfer-nontransfer

C. Commuter-noncommuter

D. Military service

E. Interest area in industrial arts

F. Participation in on-campus clubs:

1. Industrial arts educational and professional organizations

2. Honorary fraternities

3. Special interest clubs

4. Intercollegiate athletics

5. Music

6. Art organizations

7. Religious clubs

8. Service clubs

9. Social fraternities and clubs

10. Publications

11. Student government

12. Intramural athletics

13. Other organizations

G. Off-campus clubs and organizations

The Activities Profile Sheet was designed specifically for the sample studied. Names of clubs were listed under the appropriate headings. The classification of clubs into the various categories was made by referring to the college catalogue.

The Sample

Reasons for selection of sample from Oswego. The decision was made to select the sample from the Oswego campus on the following points:

(1) A reason for selecting the sample from Oswego was in part based on the assumption that the view of education held by the faculty of the Industrial Arts Division at Oswego was more representative of the pragmatic pole. Rogers claimed that "no clearly defined philosophy integrates the total college effort" (16:269). However, she pointed out that the ideologies of education professed to students "are often served up casseroles of warmed-over Dewey, seasoned with ideological miscellany" (16:269). The assumption that the faculty representing the Industrial Arts Division were more representative of the progressivist view was made because the alternative view of humanism was felt less likely to be attractive to faculty members engaged in the pragmatic activities found in the content of industrial arts.

The writings of the faculty, past and present, would tend to substantiate Rogers' appraisal. Specifically, the influence of Gordon Wilbur (15) and Donald Snygg (14) is evident in the documents girding the aims and curriculum of the Industrial Arts Division. More recent publications by Gerbracht and Robinson (4), Shoemaker (12), and Devore (2)

tend to substantiate the assumption concerning the dominant point of view held by the staff at Oswego.

What seems to be the point of view expressed by members of the faculty of the Industrial Arts Division (since changed to Division of Industrial Arts and Technology) does not imply that operational aspects of the program are consistent with the articulated viewpoints.

(2) A second reason for selecting the sample from Oswego was the factor of obtaining an adequate sample from within an institution. The number of students enrolled in industrial arts education exceeded 500 undergraduates. On the other hand, few schools throughout the country have student enrollments in industrial arts which could have provided sufficient numbers for the research design of the type used in this investigation.

Total enrollment in industrial arts was approximately 550 students for school year 1964-65. More important, the senior class enrollment numbered over 100 and the freshman-new transfer students totaled about 225. This number was felt to be substantial for purposes of this study.

Geographical origins of the sample. Except for a small percentage of students the majority of the sample listed a New York State residence. Out-of-state students were from Pennsylvania, Ohio, New Jersey, and Massachusetts. A small number of students were from Canada. Non-residents totaled no more than five per cent of the sample.

Of the ninety-five plus per cent of the students from New York State the proportion of "downstaters" was nearly equal to the "up-state" population. Students from Long Island, New York City, and outlying districts of the New York Metropolitan Area were considered to be from "down-state." A large proportion of the sampling claimed residence in the Mohawk Valley area, the Southern Tier, Northern New York State, Finger Lakes-Rochester area, and the area around the city of Syracuse. Extreme western New York State and the Buffalo area were not well represented.

General description of the respondents. The inventories were administered to a group of about 360 undergraduates majoring in industrial arts at State University College at Oswego, New York. The respondents consisted of:

1. senior students with student teaching experience completed
2. freshmen students in their first year at Oswego
3. transfer students entering Oswego College for the first time and majoring in industrial arts.

The usable sample of senior students consisted of a N of 133. This number almost coincides with the 132 graduates for school year 1964-65 reported in the Industrial Arts Teacher Education Directory (7:41). The number of usable returns from incoming regular freshmen and transfers, hereafter the combined group will be referred to as Others, was 213. Of this group approximately 150 were regular freshmen and 75 were transfers. It is a conservative estimate to

claim that eighty-five per cent of all available seniors, freshmen, and transfers responded to the inventories.

Administration of the Inventories

The inventories were administered during the school year of 1964-65. All seniors enrolled in a post-student teaching seminar were asked to respond to the inventories. During the fall semester, seniors who had experienced student teaching during the spring semester of 1964 were administered the inventories; students who were student teaching during the fall semester of school year 1964-65 were sampled during the spring semester of 1965. Most transfer seniors practice-taught during the spring semester and thus were sampled during the fall term.

Students classified as Others, freshmen and transfers, were administered the inventories in a required class in an industrial arts course in design. Approximately one-half of the group were sampled each semester. The reason for administering the inventories in the design classes was the practice of scheduling concurrently into the student's program the introductory course in the professional education sequence. Therefore, although freshmen and transfer students sampled during the second semester would have had an additional semester on campus, none of these students had been exposed to the initial course in the professional education sequence. It should be pointed out that the Industrial

Arts Division was divided into two distinct areas, a department concerned with the teaching of technical courses and another department charged with teaching professional education courses.

In most cases the inventories were administered early in the semester during a scheduled class period. Students were told that the information would be confidential and the purpose of the study was to examine the relationship between student activities and responses to the inventories. The time taken to complete the inventories and data sheet varied from forty-five minutes to an hour and fifteen minutes. No time limit was imposed on the students. Students absent from classes during the administering of the instrument were asked to respond to the inventories in the investigator's office.

Treatment of the Data

Data collected from the inventories were, at best, ordinal in nature. Descriptive and inferential statistics were incorporated into the plan for the analysis of the data. The initial phase of the analysis of data employed descriptive statistics.

Testing of the major hypotheses and subhypotheses of the study was pursued using nonparametric statistics. The Median Test of Chi-square was used to test the hypotheses based on responses to Swanson's Inventory. Chi-square tests

of proportions were used to examine the hypotheses of the developmental segment, the study of patterns of viewpoints.

Subtests were developed as outcomes warranted further study or if sampling variables through the process of inspection made further analysis profitable. Extensive subtests were analyzed when the tests of hypotheses related to responses to Swanson's Inventory exceeded the .001 level of significance.

Chi-square tests were corrected for continuity to provide a margin of error on the side of the research. This meant that most of the derived Chi-square figures were smaller than figures which would have been computed without the correction. The .05 level of significance was used throughout the study. All calculations were made using a Monroematic Calculator.

Summary of the Chapter

The text of the chapter included a discussion of the two instruments employed in the investigation. Swanson's Inventory (13) was described in terms of general description, reliability, scoring, and logical relevance.

The second instrument entailed a more detailed report because the instrument was developed as part of this investigation. The instrument intended to measure patterns of viewpoints based on the technique by Osgood et al. (9).

The instrument included six items representing teacher behaviors as defined by Swanson (13). Ten scales were written over each item for the purpose of measuring patterns of viewpoints. The methods used to ascertain reliability were described in terms of probability and analysis of variance.

The Activities Profile Sheet was described as the major means of gathering data concerning membership-nonmembership in the various organizations. The sample used in the study were students at Oswego College and in most cases residents of New York State.

Approximately 350 students were administered the instruments during school year 1964-65. Students sampled were seniors, freshmen, and new transfers majoring in industrial arts. The data gathered were tabulated and subjected to nonparametric tests.

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CHAPTER V

ANALYSIS OF THE DATA OF A SAMPLING OF STUDENTS MAJORING IN INDUSTRIAL ARTS EDUCATION

Introduction

The procedure of analysis of the data was divided into two phases. In brief, the content of Phase I described the data collected from responses to the research instrument, and Phase II involved the testing of hypotheses from that data.

Phase I: Summary Statistics of the Data

Summary data of the sample. The sample from which the analysis was made included 346 students enrolled in the Industrial Arts curriculum at State University College, Oswego, New York. The frequency of usable returns on various factors is enumerated on Table 3.

Table 3. Summary data of sample used in the study of educational viewpoints of Industrial Arts majors at State University College, Oswego, New York, 1964-65

1.	Total N Administered Instruments	360 (approx.)
2.	Total Usable N	346

Table 3--Continued

3.	A.	Class in College		
		1) Seniors		133
		2) Others		213
	B.	Transfer-Nontransfer Students		
		1) Transfer		158
		2) Nontransfer		188
	C.	Commuters-Noncommuters		
		1) Commuters		78
		2) Noncommuters		268
	D.	Veterans-Nonveterans		
		1) Veterans		46
		2) Nonveterans		300
	E.	Generalist-Specialist in Industrial Arts		
		1) Generalist		86
		a) Single choice	62	
		b) Two choices	9	
		c) Three choices	8	
		d) Four or more choices	7	
		2) Specialist		260
		a) Single choice	124	
		b) Two choices	91	
		c) Three choices	36	
		d) Four or more choices	9	
	F.	Clubs and Activities		
		1) By Number of Activities		
		a) Nonmember		50
		b) Member of one club		68
		c) Member of two clubs		68
		d) Member of three clubs		51
		e) Member of four clubs		52
		f) Member of five clubs or more		57
		2) By Types of Activities		
		a) Professional organizations		
		1a Members		161
		2a Nonmembers		185
		b) Honorary*		
		1b Members		13
		2b Nonmembers		120
		c) Special interest organizations		
		1c Nonmembers		248
		2c Single membership		74
		3c Two memberships		20
		4c Three memberships		4

Table 3--Continued

d)	Intercollegiate athletics	
	1d Members	71
	2d Nonmembers	275
e)	Music	
	1e Members	24
	2e Nonmembers	322
f)	Art organizations	
	1f Members	4
	2f Nonmembers	342
g)	Religious organizations	
	1g Members	71
	2g Nonmembers	275
h)	Service organizations	
	1h Members	4
	2h Nonmembers	342
i)	Social organizations*	
	1i Members	54
	2i Nonmembers	79
j)	Student government	
	1j Members	25
	2j Nonmembers	321
k)	Student publications	
	1k Members	11
	2k Nonmembers	335
l)	Intramural athletics	
	11 Nonmembers	200
	21 Members of one activity	70
	31 Members of two activities	50
	41 Members of three activities	26
m)	Other organizations	
	1m Members	28
	2m Nonmembers	318
G.	Members-Nonmembers Off-Campus	
	1) Members	28
	2) Nonmembers	318

*The categories followed by an asterisk included only seniors.

Summary data of responses to Swanson's Inventory.

The data tabulated from the application of Swanson's Inventory are described in Table 4. Figures were computed directly from raw scores.

Table 4. Summary data of responses of 346 students of State University College, Oswego, New York, to Swanson's Inventory

1.	Total N.	346
2.	Possible Score	65
3.	Range of Scores	14-57
4.	Mean	38.563
5.	Mode	38
6.	Median	38
7.	Standard Error of Mean	0.37
8.	Standard Deviation	7.009

The data derived for this study are compared with the findings of (1) Swanson's original study with graduate students and (2) the responses of Industrial Arts teacher educators participating in the Industrial Arts Conference (Mississippi Valley Conference) in year 1955 (see Table 5).

No attempt was made in this investigation to ascertain reliability by the test-retest method and the analysis of variance method employed by Swanson.

Table 5. Comparative summary statistics of (1) this sample's responses, (2) teacher educators' responses, and (3) graduate students' responses to Swanson's Inventory

	This Sample	Teacher Educators**	Graduate Students***
1. Number of cases	346	45	305
2. Possible score	65	65	65
3. Range	14-57	26-63	11-63
4. Median	38	41	41
5. Mean	38.56	41.93*	40.72
6. Standard Deviation	7.009	8.388*	6.97
7. Standard Error of Mean	0.37	1.25*	0.39*

*Figures followed by an asterisk were computed by the investigator of this study.

**(4).

***(5).

Summary data concerning the returns of the Educational Viewpoints Inventory. The treatment of data for descriptive purposes was handled in the following manner. First, scores in raw form were computed. Second, particular scores were subjected to a conversion table to enable summation of scores. In the third step the scores were summed and divided by ten. For the final step appropriate computations were made. Table 6 depicts the results of the

Table 6. Summary statistics of data derived from the responses to the Educational Viewpoints Inventory

1.	Size of Sample		346
2.	Possible Score	6.00 (low)	-42.00 (high)
3.	Range	6.4	-30.7
4.	Theo. md, m, mode		24
5.	Mean of Sample		18.2187
6.	Standard Deviation		3.388
7.	Standard Error of Mean		0.18
8.	Median		18.1

calculations. The categories of responses expressed by deviations are shown on Table 7 by frequency and percentages.

Table 7. Description of responses to Educational Viewpoints Inventory by frequency and percentages on the basis of deviations

Dev.	Frequency by +	Frequency by -	Percentages +	Percentages -	Percentages Theo.	Total Frequency	Percentage Total	Percentage Theo.
± 1	134	113	38.00	32.00	34.00	247	70.0	68.00
± 2	33	45	9.5	13.00	13.59	78	22.5	27.18
± 3	12	4	3.49	2.15	0.13	16	5.6	0.26
± 4	2	1						

Reliability of Educational Viewpoints Inventory: Analysis of variance technique. The inventory reliability score of r_{tt} = .52+ with a $SE_{measurement}$ of 24.3+ using raw scores was computed using Hoyt's technique (1). Summations and computations are depicted below.

	df	ss	
Between Individuals	345	85,571.40	248
Between Items	5	66,028.30	13,205.6
Residual	1,725	204,214.30	118.3
Total	2,075	355,813.00	.....

$r_{tt}248 - 118.3/248 = .52+$

$SE_{measurement} = \sqrt{5(118.3)} = 24.3$

Reliability of Educational Viewpoints Inventory: Item probability. The reliability in terms of probability for six items are included in the Appendix B (Tables B1 to B6). Each table includes the data of the comparisons described on page .

Table 8 depicts in summary form the average probability for each item. The average probability figures were taken from the column titled Total found on Tables B1 to B6. The figures shown are carried out to the third decimal place.

Table 8. Average probability figures derived from comparisons for six items in terms of deviations*

Dev. + -	Probability: Item Number 1	2	3	4	5	6	Theo. Prob.
0.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
0.5	.772	.812	.810	.792	.745	.774	.841
1.0	.552	.456	.529	.403	.403	.427	.423
1.5	.269	.292	.365	.248	.251	.272	.230
2.0	.164	.161	.237	.158	.164	.184	.071
2.5	.123	.126	.170	.123	.105	.137	.027
3.0	.068	.088	.097	.091	.079	.091	.002

*Probability derived from equivalent of 342 = N, each person contributing six comparisons except for few cases in which comparisons were less than six.

The results revealed that the item reliabilities were not acceptable at the .05 level of significance for six items. This may be attributed to the design of the instrument and/or to inconsistency of viewpoints on the part of the students.

Probability figures for the three scales are shown on Tables B7, B8, and B9 in Appendix B. Comparisons were made following the format discussed earlier in Chapter V. Table B7 describes probability for the evaluative scales; Table B8, the potency scale; and Table B9, the activity scales. In a majority of the comparisons the figures

revealed a high degree of consistency for the various scales when averages were made over six items. This might be interpreted to mean that there was a "self correcting" tendency of responses on the overall pattern in scoring.

Phase II: Part A; Tests of the Hypotheses

Others versus seniors. The data derived from the application of Swanson's Inventory were used to test the directional hypothesis that seniors would differ in viewpoint from Others. The null and alternate hypotheses were expressed as follows:

H_o: There would be no difference in proportion of scores between Others and seniors as related to educational viewpoints using the Median Test for analysis.

H_1: A larger proportion of seniors would score in the direction of the "progressive" end of the scale than Others.

The data presented on Table 9 were recorded on a 2 X 2 contingency table and Chi-square was calculated using the Median Test (2). The .05 level was used as the point of significance. The results of calculation revealed a Chi-square value of 18.152 which exceeded the 2.71 value at the .05 level for a one-tailed test. A decision was made to reject the null hypothesis in favor of the alternate hypothesis.

Table 9. Median test between seniors' and Others' responses to Swanson's Inventory of educational viewpoints

	Others	Seniors	Totals
Less Progressive	126	47	173
More Progressive	87	86	173
Totals	213	133	346

$df = 1$

$X^2 = 18.152$

Commuter versus noncommuters. The analysis of the hypothesis comparing the educational viewpoints of commuters and noncommuters was conducted through the application of the Median Test. The hypothesis implied that there would be differences between the two groups and that the direction would be one in which the commuting students would tend to be more progressive. The large proportion of senior students classified as commuters indicated the possibility for need to further study the data, and as a result, two subhypotheses were developed controlling class in college. The two subhypotheses were intended to be tested only if the null hypothesis and alternative hypothesis, H_1, were rejected.

The null and alternate hypotheses were:

H_o: There is no significant difference between the medians of commuters and noncommuters in response to Swanson's Inventory.

H_1: Commuters are less progressive than noncommuters in response to Swanson's Inventory.

H_2: Commuters are more progressive than noncommuters in response to Swanson's Inventory.

Table 10 depicts the data in the form from which Chi-square was calculated. The .05 level of significance with a 2.71 figure for a one-tailed test was chosen to test the calculated figure. The Chi-square figure of 3.503 with 1 degree of freedom exceeded the .05 level of significance. After examining the Chi-square table, the null and first alternative hypotheses were rejected in favor of H_2.

Table 10. Median Test between commuters' and noncommuters' responses to Swanson's Inventory of educational viewpoints

	Commuters	Noncommuters	Totals
Less Progressive	31	141	172
More Progressive	47	127	174
Totals	78	268	346

$df = 1$

$X^2 = 3.503$

In view of the rejection of H_o and H_1 the analysis was extended to the testing of the two subhypotheses which were generated as a result of the noticeable difference of proportion of seniors classified as commuters in relation to

Other students. The subhypotheses were stated in the form:

SH_1: Senior commuters are more progressive than senior noncommuters.

Rationale: Examination of the data revealed that a disproportionate number of senior commuting students had been enrolled at the institution for a longer period of time. Many of the commuting seniors were residents of fraternity houses and were technically commuters according to the college by-laws.

SH_2: There is no difference between commuting and noncommuting students in the Other category regarding viewpoints.

Rationale: The majority of commuting and noncommuting students had been associated with the Industrial Arts program for a relatively short period of time of less than one year. For this reason, it was theorized that the commuters and noncommuters would not differ as to medians holding particular viewpoints.

The first test of a subhypothesis compared senior commuters and senior noncommuters. The null and alternate hypotheses are as follows:

H_o: There is no difference between the medians of senior commuters and senior noncommuters in response to Swanson's Inventory.

H_1: Mdn_1 (Commuters) > Mdn_2 (Noncommuters)

The sampling included 133 Senior students with 49 categorized as commuters and the remaining 84 students as noncommuters. The results of the Median Test on Table 11 indicated that seniors under both classifications did not differ significantly. Chi-square was found to be .478 which the table of Chi-square (2:249) revealed a probability figure of .50(.46) was exceeded but was less than a probability figure

Table 11. Median Test between senior commuters and senior noncommuters in response to Swanson's Inventory of educational viewpoints

	Senior Commuters	Senior Noncommuters	Totals
Less Progressive	23	46	69
More Progressive	26	38	64
Totals	49	84	133

$df = 1$

$X^2 = .478$

of .30(1.07). The decision was made to accept the null hypothesis.

Most of the students in the Other category were freshmen and transfer students. The total number in the sampling numbered 213 students with 21 commuters and 192 noncommuters. Analysis of the second subhypothesis was made by testing the following null and alternate hypotheses.

H_o: There is no difference between the medians of Other commuters and Other noncommuters in response to Swanson's Inventory.

H_1: Mdn_1 (Commuters) Mdn_2 (Noncommuters)

The data in Table 12 were used to determine Chi-square with a level of significance of .05(3.84) for a non-directional test. Calculations revealed a Chi-square value of .153 from which a decision was made to accept the null hypothesis and to reject the alternate hypothesis.

Table 12. Median Test between Other commuters and Other noncommuters in response to Swanson's Inventory of educational viewpoints

	Other Commuters	Other Noncommuters	Totals
Less Progressive	9	96	105
More Progressive	12	96	108
Totals	21	192	213

df = 1

X^2 = .153

The results of the test of the hypothesis and sub-hypotheses concerning commuters and noncommuters indicated that differences in medians of the groups could be attributed in part to the larger proportion of seniors living in off-campus housing.

Veterans versus nonveterans. The hypothesis generated for the study concerning viewpoints held by veterans and nonveterans read:

> Veterans will tend to be more progressive than nonveterans in educational outlook.

The null and alternate hypotheses of the investigation were structured as follows:

H_o: There is no difference between the medians of veterans and nonveterans in response to Swanson's Inventory.

H_1: There is a significant difference between the medians of veterans and nonveterans with the responses of veterans more progressive.

Forty-six of the total sample of 346 students were classified as veterans while the remaining 300 students did not have previous military experiences. The Median Test of Chi-square with a figure of 2.71 at the .05 level of significance for a directional test was employed for decision-making purposes. The result of the calculations was derived from the data on Table 13. It should be noted that there was a larger proportion of veterans in the progressivist category than nonveterans. However, the result of the Median Test did not justify the rejection of the null hypothesis in favor of the alternate hypothesis. Therefore, the decision was made to accept the null hypothesis and to reject the alternate hypothesis.

Table 13. Median Test between veterans' and nonveterans' responses to Swanson's Inventory of educational viewpoints

	Veterans	Nonveterans	Totals
Less Progressive	19	154	173
More Progressive	27	146	173
Totals	46	300	346

$df = 1$

$X^2 = 1.228$

Transfer versus nontransfer. Table 14 includes the data used to test the hypothesis concerning viewpoints of education of transfer and nontransfer students. The hypothesis was stated in the form:

> Nontransfer students will tend to be more progressive than transfer students in educational outlook.

For purposes of analysis, the null and alternate hypotheses were:

H_o: There is no difference between the medians of transfer and nontransfer students in response to Swanson's Inventory.

H_1: Nontransfer students are more progressive than transfer students regarding educational viewpoints.

Table 14. Median Test between transfer and nontransfer student responses to Swanson's Inventory of educational viewpoints

	Transfer	Nontransfer	Totals
Less Progressive	78	94	172
More Progressive	80	94	174
Totals	158	188	346

$df = 1$

$X^2 = .00008$

The Median Test with a significant level of .05 was chosen to test the hypothesis. The sample consisted of 158 transfer students and 188 nontransfer students. The

calculated Chi-square figure of .00008 led to the decision to reject the alternate hypothesis in favor of the null. Thus, the original hypothesis implying difference of educational viewpoints between transfer and nontransfer students was rejected and replaced by the conclusion that the proportion of viewpoints between transfers and nontransfers did not differ significantly.

Generalist versus specialist. The Median Test was applied to examine the hypothesis concerning the relationship between the proportions of responses to Swanson's Inventory of viewpoints and the degree of occupational specialization within Industrial Arts. It was theorized that there ought to be some degree of relationship between viewpoints of education and the intended occupational specialization of the students. Specifically, the hypothesis read:

> Students intending to become general Industrial Arts teachers tend to respond towards the progressive end of the continuum in larger proportions than students who perceive themselves as specialists or single content area teachers.

The following statements reveal the manner in which the operational hypotheses were stated:

H_o: There is no difference between the median scores of students intending to become general Industrial Arts teachers and students signifying a desire to specialize in a single area and/or a few areas on a content basis.

H_1: Students who see themselves as preparing to become general Industrial Arts teachers will tend to be more progressive than those students with orientation towards specialization.

Four separate Median Tests employing various combinations of generalist-specialist proportions were analyzed. The initial test included all respondents to the instrument. This number totaled 346 with 86 generalists and 260 considered as being "less general." Table 15 depicts the data from which Chi-square was calculated with .05(2.71) with 1 df set as the point from which the acceptance-rejection decision was made. Computation revealed a Chi-square figure of .758 which was greater than .50(.455) but less than .30 (1.074) probability levels. The null hypothesis was accepted upon examination of the table of Chi-square (2:249).

Table 15. Median Test between "generalists" and "less general" students' responses to Swanson's Inventory of educational viewpoints

	Generalist	Less General	Totals
Less Progressive	39	134	173
More Progressive	47	126	173
Totals	86	260	346

df = 1

X^2 = .758

The second test in this section of the analysis of the data included students who scored in the first and fourth quartiles on the Viewpoints of Education Inventory.

These students represented the extreme scores of the sample studied in the preceding paragraphs. By examining the extreme cases, it was hypothesized that "extreme generalists" were more progressive than "extreme less general" students. The null and alternate hypotheses were:

H_o: There is no difference between the medians of "extreme generalists" and "extreme less general" students in response to Swanson's Inventory of Viewpoints.

H_1: The median of students classified as "extreme generalists" are more progressive than the median score of students in the category of the "extreme less general."

The results of calculations of the Median Test from the data on Table 16 revealed a Chi-square figure of 1.655 which fell between the .10(1.64) and .05(2.71) levels of probability for a directional test. The decision was made to suspend judgment as the computed figure was considered to be in the area of doubt. Further studies may shed a definite answer to the problem.

Table 16. Median Test between "extreme generalists" and "extreme less generalists" regarding responses to Swanson's Inventory of educational viewpoints

	Extreme Generalist	Extreme Less Generalist	Totals
Less Progressive	15	71	86
More Progressive	23	63	86
Totals	38	134	172

$df = 1$

$X^2 = 1.655$

The next test included students who were classified as "single choice generalists" and "single choice specialists." Specialists were considered those who marked one area of content interest while generalists were classified on the basis of a single choice under the heading of general Industrial Arts. The selected sample consisted of 183 students of which 62 fit the generalist classification and the remaining 124 were categorized as specialists.

The null and alternate hypotheses were:

H_o: There is no difference between the medians of "single choice generalists" and "single choice specialists" regarding the responses to Swanson's Inventory of Viewpoints.

H_1: The median of the "single choice generalists" will be more progressive than the median of the "single choice specialists."

Table 17 depicts the data from which Chi-square was determined using the Median Test with a significance level of .05(2.71). The computed Chi-square figure of 1.185 fell between the tabled figure of 1.07 and 1.64 with probability levels of .20 and .10 respectively. The calculated Chi-square figure prompted the decision to accept the null hypothesis; however, it was recommended that further studies be made.

The results of the preceding test suggested the idea to extend the analysis of the data to include a selected sample of extreme scores from the generalist-specialist categories. For purposes of analysis the scores of students

Table 17. Median Test between "single choice generalists" and "single choice specialists" regarding responses to Swanson's Inventory of viewpoints

	Single Choice		
	Generalists	Specialists	Totals
Less Progressive	27	66	93
More Progressive	35	58	93
Totals	62	124	186

$df = 1$

$x^2 = 1.185$

which fell in the first and fourth quartiles were combined and the Median Test applied using the data on Table 18. The two groups were designated the titles of "extreme single choice generalists" (ESCG) and "extreme single choice specialists" (ESCS) with a combined n of 92. Of this n of 92, there were 28 ESCG and 64 ESCS.

A one-tailed test at the .05 level of significance was chosen to test the null and alternate hypotheses which were stated:

H_o: There is no difference between the medians of ESCG and ESCS in response to Swanson's Inventory.

H_1: The median score of the ESCG group is more progressive than the median score of the ESCS group regarding response to the inventory.

Table 18. Median Test between responses of "extreme single choice generalists" and "extreme single choice specialists" to Swanson's Inventory of educational viewpoints

	Extreme Single Choice		
	Generalists	Specialists	Totals
Less Progressive	10	36	46
More Progressive	18	28	46
Totals	28	64	92

$df = 1$

$X^2 = 8.804$

Chi-square was calculated to be 8.804. The table of Chi-square revealed that the computed figure to be significant at the .05(2.71) level. The decision was made to reject the null hypothesis in favor of the alternate hypothesis.

Briefly, the results of the four tests seemed to indicate that the instrument differentiated between generalists and specialists who scored at the extremities in relation to the distribution derived from responses to the inventory. The table which follows depicts the Chi-square figures of the four tests. On the basis of the information on Table 19 it was hypothesized that the responses derived from the instrument developed by Swanson reinforces the idea that generalists tend to be more progressive than specialists.

Table 19. A list of calculated Chi-square figures listed in order from the study of total sampling to the study of extreme responses of a selected sampling

	Chi-square Figure
1. Total N of 346	.758
2. First and fourth quartiles of Total N of 346	1.655
3. Total N of 186: "Single Choice generalists and specialists"	1.185
4. First and fourth quartiles of Total N of 186	8.804*

*Significant at the .05 level.

Members versus nonmembers of clubs and activities: Part I: By number of memberships in clubs and organizations without differentiation by type of club or activities. The content of the following paragraphs was the result of analysis to ascertain the effect of membership and nonmembership in campus sanctioned club activities with regard to responses to Swanson's Inventory. No attempt was made to differentiate the types of activities and/or clubs in which the various members of the sample participated.

There were 50 nonmembers and a total of 296 students who held membership and/or participated in one or more activities and clubs. The Median Test of Chi-square was the statistical treatment employed on the group of nonmembers and the total group of joiners. The original hypothesis read:

Nonmembers of clubs and activities will tend to be more progressive in educational viewpoints than members of such organizations.

For purposes of analysis the null and alternate hypotheses were as follows:

H_o: There is no difference between the median scores of members and nonmembers of activities and clubs sanctioned by the college in response to Swanson's Inventory.

H_1: Nonmembers will be more progressive than students who participated in clubs and activities.

The results of the calculated Chi-square from the content on Table 20 was .923 with 1 degree of freedom and with a significance level of .05. In view of the findings, the null hypothesis was accepted.

Table 20. Median Test between members and nonmembers of clubs and activities regarding responses to Swanson's Inventory of educational viewpoints

	Members	Nonmembers	Totals
Less Progressive	149	24	173
More Progressive	147	26	173
Totals	296	50	346

$df = 1$

$X^2 = .023$

Further tests of Chi-square were made between members and students classified into groups according to number of activities and/or clubs indicated on the personal data sheets. Five groups ranging from a single activity group to students engaged in five or more activities and clubs were categorized in addition to the groups of nonmembers. Table 21 depicts (1) the classification of groups by number of activities, (2) the number of students in each category, and (3) the median score for the various groups.

Table 21. Nonmembers and members of clubs and activities by number of activities

Number of Activities	Number of Students	Median
Nonmembers--0	50	39
Members-----1	68	38
Members-----2	68	39
Members-----3	51	38
Members-----4	52	39
Members-----5 or more	57	37

Chi-square tests were made to determine whether significant differences existed in response to Swanson's Inventory between the nonmembers and the five groups of members. Tables C1, C2, C3, C4, and C5 in the Appendix are in

the 2 X 2 form from which calculations were made. It was hypothesized that nonmembers would be more progressive than members in all comparisons. Null and alternate hypotheses were stated for each 2 X 2 table; and in all cases the alternate hypotheses were rejected in favor of the null hypotheses. Listed below are the Chi-square figures for the five comparisons.

1.	Nonmembers versus members$_1$	.326*
2.	Nonmembers versus members$_2$	.034*
3.	Nonmembers versus members$_3$	.088
4.	Nonmembers versus members$_4$	.000
5.	Nonmembers versus members$_{5+}$	.771

Members versus nonmembers of clubs and activities: Part II: By type of club or activity. A second category for analytical purposes of studying members and nonmembers on the basis of responses to Swanson's Inventory of viewpoints was made by differentiating students by type of activity and clubs in which there was indicated participation. Type of activity or club implied a "kind" of student organization with specific programs. In this phase of the investigation it was theorized that the type of clubs and/or activities would attract particular groups of students.

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*Prediction of hypothesis opposite from calculated Chi-square figure.

A. Professional Educational Organizations

Of the activities and clubs open to student membership there were some organizations which seemed to have purpose similar to those of the Industrial Arts Division of the College. Among the clubs were: SEANYS, the NEA affuliated campus organization for students in teacher education; the Industrial Arts Club; members of the House of Delegates, a governing body of students sponsored by the Industrial Arts Division; and the Graphic Arts Club. The aims of each club attempted to foster the teaching profession; thus, it was theorized the members of these organizations would tend to be more progressive as a group than nonmembers.

The statistical hypotheses were stated:

H_o: There is no difference between the medians of members of professional organizations and nonmembers in response to Swanson's Inventory.

H_1: Members of professional organizations are more progressive than nonmembers.

Tables 22 and 23 represent the data in the form from which Chi-square figures were derived. The Median Test was applied on the total sample of 346 students for the Chi-square figure on Table 22; whereas, the Chi-square figure on Table 23 was computed from a sampling of the first and fourth quartiles of the initial group. In both cases, the null and alternate hypotheses stated in the preceding paragraph served as the hypotheses under test.

Table 22. Median Test between members of professional organizations and nonmembers in response to Swanson's Inventory

	Nonmembers	Members	Totals
Less Progressive	99	74	173
More Progressive	86	87	173
Totals	185	161	346

df = 1

x^2 = 1.6727

Table 23. Median Test between members of professional organizations and nonmembers using a selected sample from the first and fourth quartiles in response to Swanson's Inventory

	Nonmembers	Members	Totals
Less Progressive	49	37	86
More Progressive	46	40	86
Totals	95	77	172

df = 1

x^2 = .094

A Chi-square figure of 1.672 was found for the total sampling and .094 was the calculated figure for the test on the sample of students representing the extreme quartiles. In both cases, the .05(2.71) level of significance was used

as a criterion for decision-making. The decision was made to reject the alternate hypothesis in favor of the null in both tests after examining the scores in relation to the figures on the table of Chi-square (2:249).

Subtests of Chi-square were made to study whether the quantity of indicated memberships in professional organizations had any bearing on educational viewpoints between nonmembers and members. Three sub-groups of members of professional organizations were as follows: (1) those with single membership, (2) those with two memberships, and (3) those students with three or more memberships.

Tables C6, C7, C8, C9, C10, and C11 in the Appendix are in the 2 X 2 form from which analysis was made. The hypotheses for the comparisons of the three groups of members versus the nonmembers were similar to that which predicted members to be more progressive than nonmembers. For the remaining three comparisons, the information on Tables C9, C10, and C11, it was theorized that:

1. The group of students with three or more indicated memberships in professional organizations would be more progressive than those with memberships in one or two clubs.

2. The students holding memberships in two clubs would be more progressive than those holding single memberships in professional organizations.

The calculated Chi-square figures for the six subtests are in summary form on Table 24. The results disclosed that there was a significant difference between

Table 24. Summary Table for Chi-square of six subtests of student nonmembers and members of professional organizations in response to Swanson's Inventory

Test Between	Chi-square Figure
1. Nonmembers versus Members of One Club	1.015
2. Nonmembers versus Members of Two Clubs	3.1716*
3. Nonmembers versus Members of Three or More Clubs	.214
4. Members of One Club versus Members of Two Clubs	2.027**
5. Members of One Club versus Members of Three or More Clubs	1.092***
6. Members of Two Clubs versus Members of Three or More Clubs	1.152***

*Significant at .05 level.

**Area of doubt.

***Direction of prediction reversed from outcome.

nonmembers and members in two clubs. In two cases the predictions of the hypotheses were in the opposite direction in relation to the calculated figures. In both cases the group with three or more memberships was involved. The Chi-square figure approached the level of significance but did not equal or exceed the critical figure of 2.71 in the comparison between the single membership group and the membership in two clubs; thus, the decision was made to suspend judgment concerning the particular comparison until further

evidence is made available. The null hypotheses were accepted in the remaining four tests.

B. Honorary Organizations

The test of Chi-square between members and nonmembers of honorary academic societies and fraternities was limited to senior students. At the time of the administration of the instruments of the study, both first semester transfer and regular freshmen students were not eligible for membership. In most, if not all, instances members of scholastic honorary societies invited students to membership only after spending a year or more on the Oswego campus.

The hypothesis regarding this aspect of the study read:

> Members of honorary clubs and societies in the field of education and industrial arts will tend to be more progressive in educational viewpoint than nonmembers.

For purposes of analysis, the null and alternate hypotheses were stated in the following manner:

H_o: There is no difference between the median of senior members of honorary academic societies and the median of senior nonmembers in response to Swanson's Inventory.

H_1: Senior members of scholastic honorary societies are more progressive than the senior nonmember group in response to Swanson's Inventory.

Data on Table 25 from which the Chi-square figure was calculated shows 13 members from a group of 133 seniors. The Median Test was used to compute Chi-square. Reference to the Chi-square table indicated that the derived figure of

Table 25. Median Test between nonmembers and members of academic honorary societies and fraternities in response to Swanson's Inventory

	Nonmembers	Members	Totals
Less Progressive	62	4	66
More Progressive	58	9	67
Totals	120	13	133

$df = 1$

$X^2 = 1.298$

1.298 did not exceed the .05 level of significance for a directional test with 1 degree of freedom. The result warranted the decision to accept the null hypothesis.

C. Special Interest Organizations

The third grouping of clubs and activities based on type was the classification of special interest organizations and included areas such as riding, skiing, swimming, drama, flying, dancing, and judo. It was theorized that members in these organizations would be less likely to hold and express viewpoints of education advocated by the occupation of industrial arts teaching than students who did not participate.

Data detailed on Table 26 portray the frequency of nonmembers and members in terms of the number of memberships held by individual students in special interest clubs.

Table 26. Frequency of members and nonmembers of special interest clubs in terms of number of memberships held

Number of Memberships	Frequency
Nonmembers	248
Single Membership	74
Two Memberships	20
Three or More Memberships	4
Total	346

After reviewing the data on the preceding table, the information was collapsed to form a 2 X 2 table for purposes of analysis. Chi-square was determined from the content of Table 27. The statistical hypotheses were:

H_o: There is no difference between the median of members and special interest clubs and the median of nonmembers in response to Swanson's Inventory.

H_1: The median of members of special interest clubs will be less progressive than the median of nonmembers.

The result of computation showed a Chi-square figure of .014. It was concluded that the null hypothesis be accepted.

Table 27. Median Test between members of special clubs and organizations and nonmembers in response to Swanson's Inventory

	Members	Nonmembers	Totals
Less Progressive	50	123	173
More Progressive	48	125	173
Totals	98	248	346

df = 1

X^2 = .014

D. Intercollegiate Athletics

The examination of data concerning student participants in intercollegiate athletics and nonparticipants stemmed from the following statement:

> Students engaged in intercollegiate athletics will tend to be less progressive in educational viewpoint than members.

The null and alternate hypotheses were framed in the following manner for purposes of testing:

H_o: There is no difference between the medians of members of intercollegiate athletic teams and nonmembers in response to Swanson's Inventory.

H_1: Members of intercollegiate athletic teams will be less progressive than nonmembers in response to Swanson's Inventory.

Of the 346 students which comprised the sampling, 71 indicated participation in intercollegiate athletics. It should be noted that a large percentage of the male

population of the college were enrolled in the Industrial Arts Division. Forty-nine (49) were concentrating on one sport, seventeen (17) were members of two activities, and five (5) students participated in three or more athletic activities.

In Table 28 is recorded the data from which analysis was made. The Median Test was applied to the total number of participants and nonmembers. No attempt was made to investigate whether differences existed between nonmembers and members classified by the number of athletic activities engaged in. Chi-square was found to be .637 with 1 degree of freedom at the .05 level of significance. The decision was made to reject the alternative hypothesis in favor of the null after inspecting the results.

Table 28. Median Test between members of intercollegiate athletic teams and nonmembers in response to Swanson's Inventory

	Members	Nonmembers	Totals
Less Progressive	39	134	173
More Progressive	32	141	173
Totals	71	275	346

$df = 1$

$X^2 = .637$

E. Music Organizations

Twenty-four (24) students from the sample of 346 respondents specified participation in musical organizations sponsored by the college. This investigation did not attempt to ascertain membership in informal bands and ensembles. The hypothesis in question read:

> Nonmembers of musical organizations will tend to be more progressive in educational viewpoint than members.

The Median Test was used to determine whether the groups differed significantly. The null and alternate hypotheses were stated in the following manner:

H_o: The medians of nonmembers and members of musical organizations will not differ significantly in response to Swanson's Inventory.

H_1: The median of the nonmembers will differ significantly in the direction of being more progressive than the median of the musicians.

The data as presented on Table 29 was used to calculate Chi-square. The derived figure of .044 did not exceed the .05 level of significance with 1 degree of freedom for a directional test. Therefore, the alternate hypothesis was rejected in favor of the null hypothesis.

Table 29. Median Test between nonmembers and members of musical organizations in response to Swanson's Inventory

	Nonmembers	Members	Totals
Less Progressive	160	13	173
More Progressive	162	11	173
Totals	322	24	346

F. Art Organizations

The test of hypothesis concerning student members of art organizations and nonmembers could not be affected. Four students from the population of 346 studied admitted to having memberships in art-oriented clubs. This proportion of students in art clubs did not provide an adequate sampling for statistical testing. For this reason judgment regarding the hypothesis:

> Members of art-oriented clubs will tend to be more progressive in viewpoint than nonmembers.

was suspended for purposes of this study. The number of industrial arts students of this sample indicating membership in art clubs may be indicative of a pattern of noninterest on the part of the general body of industrial arts students at Oswego towards the area of art.

G. Religious Organizations

The data to test the hypothesis concerning nonmembers and members of religious organizations recognized by the college as part of the extracurricular program were set in the 2 X 2 table as follows.

Table 30. Median Test between members and nonmembers of religious organizations for Oswego students in response to Swanson's Inventory

	Members	Nonmembers	Totals
Less Progressive	42	131	173
More Progressive	29	144	173
Totals	71	275	346

df = 1

$X^2 = 2.551$

The hypothesis was recorded in an earlier chapter in the following manner:

> Members of religious organizations will tend to be less progressive in viewpoints than nonmembers.

The Median Test of Chi-square was used to test the null hypothesis; and the null and alternate hypotheses were stated:

H_o: There is no difference between the median of members of religious organizations and the median of nonmembers in response to Swanson's Inventory.

H_1: The median of nonmembers is more progressive than the median of members of religious organizations in response to Swanson's Inventory.

Chi-square was found to be 2.551. The resultant figure was found to be between the .10 and .05 level of probability; thus, the decision was made to suspend judgment until further conclusive evidence is made available.

H. Service Organizations

The proposed testing of the hypothesis concerning members of service organizations and nonmembers did not materialize. Four (4) out of the total sampling of 346 students indicated membership in service organizations. As in the case of membership in art organizations, the small proportion of students participating in service clubs was theorized as being one of the activities in which industrial arts students did not find personal satisfaction and recognition.

I. Social Organizations

Members of local fraternal groups, commonly called "Greeks" on the Oswego campus, and members of other socially oriented clubs were included under this classification. Membership was not open to first semester freshmen and transfer students at the time of the study. For this reason the test of hypothesis included only senior students. However, during the second semester a number of freshmen and transfers

had become eligible and had gained membership into social fraternities.

The hypothesis under consideration was reformulated from the original to read:

> Senior members of fraternities are less progressive than senior nonmembers in response to Swanson's Inventory.

The statistical hypotheses were:

H_o: There is no difference between the median of senior nonmembers and members of social fraternities in response to Swanson's Inventory.

H_1: Senior members of fraternities are less progressive than senior nonmembers.

Table 31 shows that of the 133 seniors, 54 belonged to fraternities while the remaining 79 were considered nonmembers. The calculated Chi-square revealed a figure of .061 which prompted the decision to reject the alternate hypothesis in favor of the null. A second test incorporating the data from the first and fourth quartiles of the senior sampling resulted in Table 32. The computed Chi-square figure was found to be .550. The statistical hypotheses were similar to those employed in the preceding test. However, in this particular situation, the direction of the calculated Chi-square figure was reversed from the prediction. Again the null hypothesis was accepted as the computed figure did not exceed the .05 level of significance.

Table 31. Median Test between senior members of fraternities and nonmembers in response to Swanson's Inventory

	Members	Nonmembers	Totals
Less Progressive	28	38	66
More Progressive	26	41	67
Totals	54	79	113

df = 1

X^2 = .061

Table 32. Chi-square Test between senior nonmembers and members of fraternities in response to Swanson's Inventory using a sample of extreme quartile scores

	Members	Nonmembers	Totals
Less Progressive (Q1)	13	20	33
More Progressive	17	16	33
Totals	30	36	66

df = 1

X^2 = .550

J. Publications

Eleven (11) out of 346 students of the sample checked items concerning membership in student publications activities. A 2 X 2 table was set up to test the hypothesis:

> Members of student publications activities will tend to be more progressive in viewpoint than nonmembers,

although the number of reported members in organizations with primary interests in publications was small. Null and alternate hypotheses were stated as follows:

H_o: There is no difference between the median of members of organizations for publications and the median of nonmembers in response to Swanson's Inventory.

H_1: Members of organizations for publications are more progressive than are nonmembers in response to Swanson's Inventory.

Chi-square was found to be .037 from the application of the Median Test to the data found on Table 33. The decision was made to reject the alternate hypothesis and to accept the null after consulting the Table of Chi-square (2). The resultant figure of Chi-square was in the opposite direction from that predicted in the hypothesis.

K. Student Government

Participants of student government numbered 25 students out of the sampling of 346. Twenty (20) of those classified as members were seniors while the remaining five (5) were categorized as Others. Technically, all students in the sampling were members of the student association;

Table 33. Median Test between members of organizations for publications and nonmembers in response to Swanson's Inventory

	Members	Nonmembers	Totals
Less Progressive	7	166	173
More Progressive	4	169	173
Totals	11	335	346

$df = 1$

$X^2 = .037$

however, the students designated as members of student government were those who took active roles in the policy and decision-making aspects of self-government.

The hypothesis read:

> Members of student government will tend to be more progressive in viewpoint than nonmembers.

The statistical hypotheses were phrased thus:

H_o: There is no difference between the median of members of student government and the median of nonmembers in response to Swanson's Inventory.

H_1: Members of student government are more progressive than nonmembers.

A 2 X 2 table was developed and the Median Test applied to ascertain Chi-square. Table 34 shows the data in the form from which a Chi-square figure of .635 was calculated. The decision was made to reject the alternate hypothesis in favor of the null as a result of the findings.

Table 34. Median Test between members of student government and nonmembers in response to Swanson's Inventory

	Members	Nonmembers	Totals
Less Progressive	9	162	173
More Progressive	14	159	173
Totals	25	321	346

$df = 1$

$X^2 = .635$

In view of the fact that a larger proportion of seniors were categorized as members of student government, a subtest was made to investigate the following subhypothesis:

> Senior members of student government are more progressive than senior nonmembers in response to Swanson's Inventory.

The statistical hypotheses were stated in this manner:

H_o: There is no difference between the median of senior members of student government and the median of nonmembers in response to Swanson's Inventory.

H_1: Senior members of student government are more progressive than senior nonmembers.

The data on Table 35 was used to determine Chi-square for the subhypothesis. The decision to reject the alternate hypothesis in favor of the null was made after ascertaining the level of significance was not exceeded by the calculated figure.

Table 35. Median Test between senior members of student government and senior nonmembers in response to Swanson's Inventory

	Members	Nonmembers	Totals
Less Progressive	7	59	66
More Progressive	13	54	67
Totals	20	112	133

$df = 1$

$X^2 = 1.396$

L. Intramural Athletics

Of the various activities in which students participated, the intramural athletic program was checked by a large proportion of the students. One hundred forty-six (146) of the sampling of 346 students were engaged in some form of intracollege athletics. The table which follows summarizes by number of athletic activities engaged in, the frequency of the various groups.

The hypothesis under test implied that nonmembers would be more progressive than members of intramural activities. The statistical hypotheses were structured thus:

H_o: There is no significant differences between the median of nonmembers and the median of members of intramural athletics in response to Swanson's Inventory.

H_1: The median of nonmembers will be more progressive in direction than the median of members of intramural athletics in response to Swanson's Inventory.

Table 36. Frequency of members and nonmembers by number of athletic activities participated in

Category	Frequency
1. Nonmembers	200
2. Members: One Activity (A)	70
3. Members: Two Activities (B)	50
4. Members: Three or More Activities (C) . . .	26
Total	346

The data on Table 37 was subjected to the Median Test and the resultant Chi-square figure of .011 suggested that the null hypothesis be accepted.

Table 37. Median Test between nonmembers and members of intramural athletics in response to Swanson's Inventory

	Members	Nonmembers	Totals
Less Progressive	74	99	173
More Progressive	72	101	173
Totals	146	200	346

df = 1

X^2 = .001

A series of subtests were conducted to analyze the data on Table 36. The initial tests of Chi-square compared the groups of nonmembers and the three sub-classifications of members. In all three cases analyzed the statistical hypotheses read:

H_o: There is no difference between the medians of members of athletics, in groups (A), (B), and (C), and the median of the groups of nonmembers in response to Swanson's Inventory.

H_1: The median of nonmembers is more progressive than the medians of groups (A), (B), and (C), in response to Swanson's Inventory.

The calculations from the data on Tables C12 and C13 found in Appendix C resulted in the decisions to reject the alternate hypothesis in favor of the null in both cases. The Chi-square figure for the data on Table C14 found in Appendix C was followed by a similar conclusion except in this case the prediction was in the opposite directions from the results. The Chi-square figures were .091, .025, and .391 for comparisons between nonmembers and groups (A), (B), and (C) respectively.

Three additional Chi-square tests were made on the data and concerned the study of the medians between groups of participants in athletics. It was theorized that students who took part in athletics to a lesser degree, meaning in fewer number of sports, would be more progressive than students engaged in more athletic activities. The statistical hypotheses were in the form:

H_o: There is no difference between the medians of students participating in less athletic activities and students grouped on the basis of engaging in more intramural activities in response to Swanson's Inventory.

H_1: The median of students classified in a group of less athletic activities will be more progressive than students belonging to a category of more athletic activities.

The data found on Tables C15, C16, and C17 in Appendix C were used to compute the Chi-squares. In all three cases the calculated figures warranted the rejection of the alternate hypotheses and the acceptance of the null hypotheses. The Chi-square figures were .034, .474, and .526. In two cases, the comparison of group (A) and group (B) and the comparison between group (B) and group (C), the prediction of the subhypotheses were reversed from the computed figures.

M. Other Organizations

This classification covered organizations not included in the preceding categories. Twenty-eight (28) students checked the data sheet for this item. It was hypothesized that members would be less progressive than nonmembers. The statistical hypotheses were stated in the following manner:

H_o: There is no difference between the median of students holding memberships in the category of "other organizations" and the median of the nonmember group in response to Swanson's Inventory.

H_1: The median of students grouped as nonmembers is more progressive than the median of students with memberships in "other organizations."

The Median Test was applied to the data to ascertain whether significant difference was apparent between the two groups. A 2 X 2 table was prepared and Chi-square was computed to be .917. As shown in Table 38, the figure was well below the .05 probability figure of 2.71, and as a consequence, the null hypothesis was accepted.

Table 38. Median Test between members of "other organizations" and nonmembers in response to Swanson's Inventory

	Members	Nonmembers	Totals
Less Progressive	17	156	173
More Progressive	11	162	173
Totals	28	318	346

df = 1

X^2 = .971

Off-campus club membership versus nonmembership. The final item of the data sheet attempted to test the hypothesis which read thus:

> Members of off-campus clubs and activities will tend to be less progressive than nonmembers.

Sixty-one (61) of the 346 students revealed memberships in activities and clubs not sponsored by the college. For analytical purposes the statistical hypotheses were in the form:

H_o: There is no difference between the median of students with memberships in activities outside the college environment and nonmembers in response to Swanson's Inventory.

H_1: The medians of nonmembers are more progressive than the medians of members of clubs and activities that are classified as off-campus activities

Table 39 shows the data in the manner from which Chi-square was calculated. The table of Chi-square revealed that the derived .807 figure did not exceed the .05 level of significance with 1 degree of freedom. Therefore, it was concluded that the null hypothesis be accepted.

Table 39. Median Test between nonmembers and members of off-campus clubs and activities in response to Swanson's Inventory.

	Nonmembers	Members	Totals
Less Progressive	34	139	173
More Progressive	27	148	173
Totals	61	287	346

$df = 1$

$X^2 = .807$

Phase II: Part B; Subtests Controlling the Factor of Class in College

The findings of the initial phase of analysis was followed by a detailed study controlling the factor of class in college. This strategy was pursued after computations revealed: (1) the Chi-square to be significant between seniors and Other students, and (2) the Chi-square figures for the remaining tests were not significant to warrant the rejection of the null hypotheses. Throughout this section of the examination of the data, the factor of class in college will be symbolized by the terms seniors and Others. The term Others will include recent transfer students and regular freshmen.

The purpose to analyze the data controlling class in college was that of ascertaining whether differences would turn up on the various factors when examined on an intra-class basis. It was theorized that if no differences resulted when analysis was made on intraclass examination on the various factors this would further reinforce the claim that the instruments were measuring the vocational ideology of teaching. A second purpose was that of examining the data controlling class in college was to ascertain whether membership-nonmembership would result in significant differences between senior and Other groupings.

All predictions will be in the direction of groups named first in the summary of comparisons.

Transfer versus nontransfer students. The tests between transfers and nontransfers included six tests of Chi-square. These tests attempted to compare transfer and nontransfer students' responses to Swanson's Inventory controlling the factor of class in college. Senior nontransfers and Other nontransfers were those students who had enrolled in the industrial arts program at Oswego as freshmen without any previous experience in other institutions of higher education. Senior transfers and Other transfers were students who at one time gained credit at other institutions of higher education and transferred into the College of Oswego.

Tables C18 to C23 found in Appendix C depict the information from which the Chi-square figures were derived. The list which follows summarizes the calculated figures of the six comparisons.

1. Senior transfers versus senior nontransfers 1.379
2. Senior nontransfers versus Other nontransfers 7.682*
3. Senior nontransfers versus Other transfers 6.505*
4. Senior transfers versus Other nontransfers 6.649*
5. Senior transfers versus Other transfers 6.485*
6. Other nontransfers versus Other transfers 0.008

The findings of the computed Chi-square reinforced the conclusion that differences exist in the sample between senior students and Other students. In the cases where the

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*Comparisons significant at the .05 level.

Median Test was applied between (1) senior transfer and senior nontransfer students, and (2) Other nontransfer and Other transfer groups, the resultant Chi-square figures did not exceed the .05 level of significance.

Veterans versus nonveterans. In subjecting the data to the tests between veterans and nonveterans class in college was controlled as was done in the preceding analysis. Six tests were conducted to ascertain the Chi-square figures found on Tables C24 to C29 in Appendix C.

The summary listing of Chi-square values which follows is similar to the pattern of the preceding set of figures.

1.	Senior veterans versus senior nonveterans	1.834
2.	Senior veterans versus Other veterans	5.607*
3.	Senior veterans versus Other nonveterans	3.303*
4.	Senior nonveterans versus Other veterans	12.813*
5.	Senior nonveterans versus Other nonveterans	10.386*
6.	Other veterans versus Other nonveterans	0.0006

The resultant figures seem to indicate that differentiation between the veteran and nonveteran groups was pronounced when comparisons were made on interclass basis. Examination of the data of this sampling showed no difference between medians of veterans and nonveterans when analysis was intraclass in nature.

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*Comparisons significant at the .05 level.

The Chi-square figure between Other nonveterans and Other veterans was in the opposite direction from that which was predicted. However, the figure of .006 warranted the rejection of the alternate hypothesis in favor of the null.

Specialists versus generalists. The examination of data in terms of emphasis in areas of study in industrial arts education controlling the factor of class in college included six tests of Chi-square.

The Median Test was employed to ascertain the Chi-square figures. The Tables C30 to C35 in Appendix C are in the form from which the computations were made. The results are listed below:

1. Senior generalists versus senior specialists 1.971
2. Senior generalists versus Other specialists 11.101*
3. Senior generalists versus Other specialists 6.315*
4. Senior specialists versus Other generalists 5.944*
5. Senior specialists versus Other specialists 5.993*
6. Other generalists versus Other specialists 0.232

In summary, the resultant figures revealed senior generalists and senior specialists when compared with Other generalists and specialists differed significantly in all four comparisons. The figures of Chi-square between: (1) senior generalists versus senior specialists, and (2) Other generalists versus Other specialists did not exceed the .05

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*Comparisons significant at the .05 level.

level of significance; however, the 1.971 Chi-square figure derived from the test between the senior groups was in the area of doubt.

A second series of tests were developed to further study the effects of degree of specialization in industrial arts in response to Swanson's Inventory. Extreme specialists and extreme generalists were defined as individuals who indicated a single area of specialization. For example, an extreme specialist would have indicated such areas as metal, woods, drawing, electricity, and ceramics as the preferred area to teach in; whereas, an extreme generalist would have selected general industrial arts as the area of concentration.

Median Tests were applied to the data found on Tables C36 to C41 in the Appendix. The derived Chi-square figures are listed below:

1. Extreme senior generalist versus extreme senior specialist 0.889
2. Extreme senior generalist versus extreme Other generalist 6.560*
3. Extreme senior generalist versus extreme Other specialist 7.852*
4. Extreme senior specialist versus extreme Other generalist 4.100*
5. Extreme senior specialist versus extreme Other specialist 1.386
6. Extreme Other generalist versus extreme Other specialist 0.776

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*Comparisons significant at .05 level.

Comparisons (2), (3), and (4) were significant at the .05 level. The tests of Chi-square for (1) and (6) followed the pattern of no significance as in the earlier findings. The results of computation between extreme senior specialists and extreme Other specialists necessitated a decision to accept the null hypothesis. All results were in the direction predicted in the hypotheses except for the comparison between extreme Other generalists and extreme Other specialists.

Membership and nonmembership in clubs and activities. Subhypotheses were tested comparing members and nonmembers of the various categories of clubs and activities while controlling the factor of class in college. These subhypotheses were formulated after the initial phase of testing of the major hypotheses had been completed. Thus, the tests to follow will analyze the data previously examined with the added control of the factor of class in college, the factor which contributed to significant differences between groups.

1) Professional Educational Organizations.

Six Chi-square tests were calculated for the analysis. In all instances the .05 level was used with a directional prediction of a Chi-square figure of 2.71. See Appendix C for calculations, Tables C42 to C47. Listed below are the derived Chi-square figures in the order of the preceding description of hypotheses.

1.	Senior members versus senior nonmembers	0.063
2.	Senior members versus Other members	3.354*
3.	Senior members versus Other nonmembers	8.434*
4.	Senior nonmembers versus Other members	3.526*
5.	Senior nonmembers versus Other nonmembers	8.730*
6.	Other members versus Other nonmembers	0.133

The outcomes were similar in all comparisons to results reported previously. The Chi-square figures of comparisons (1) and (6) led to the decision of no differences between medians of the respective groups. Significant differences were ascertained for (2), (3), (4), and (5). It was concluded that (a) class in college differentiated student groups when analysis was focused on an interclass basis, and (b) class in college did not differentiate between student groups, members and nonmembers, when the examination was intraclass in nature.

2) Honorary Organizations

Chi-square tests pertaining to honorary organizations were not conducted in view of the procedure used to analyze the original hypothesis. Further attempts to examine the data using the format in this particular section of the investigation would have been redundant. Computations in the initial phase of analysis revealed the medians of senior

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*Comparisons significant at the .05 level.

members of honorary organizations and senior nonmembers did not differ significantly.

3) Special Interest Clubs

Subtests examining the data with regards to membership-nonmembership in special interest clubs controlling class in college involved six Chi-square tests. Thirty-eight of the 133 seniors were categorized as members while the 95 remaining seniors indicated nonmembership. There were 60 members and 153 nonmembers in the Other group. It was theorized that:

A) Senior nonmembers are more progressive than senior members, Other nonmembers, and Other members.

B) Senior members are more progressive than Other nonmembers and Other members.

C) Other nonmembers are more progressive than Other members.

Information on Tables C48 to C53 in Appendix C was used in the calculations of the various Chi-square figures. Listed below are the results.

1.	Senior nonmembers versus senior members	0.000
2.	Senior nonmembers versus Other nonmembers	11.534*
3.	Senior nonmembers versus Other members	3.526*
4.	Senior members versus Other nonmembers	1.519
5.	Senior members versus Other members	2.106
6.	Other nonmembers versus Other members	0.007

*Comparisons significant at .05 level.

Comparisons between senior nonmembers and both the Other nonmember and Other member groups were significant at the .05 level of significance. In all remaining cases the Chi-square figures did not equal or exceed the .05 level of significance. The decision was made to suspend judgment until further data is made available upon examination of the results of comparisons between Senior members and the groups of Other members and nonmembers. In both cases the error in cell sizes were in favor of the research; for this reason, the computed figures may have been low estimates of Chi-square.

4) Intercollegiate Athletics

Comparisons were made between members of intercollegiate athletic teams and nonmembers in response to Swanson's Inventory controlling class in college. Twenty-nine seniors and forty-two Other students participated in intercollegiate athletics. The remaining 275 students were considered nonmembers. Of this total, there were 104 seniors and 171 Other students.

Tables C54 to C59 in Appendix C are in the form from which the Chi-square figures were tabulated. The .05 level of significance with a 2.71 figure for a directional prediction was used as the criterion for decisions. Listed below are the derived Chi-square figures.

1.	Senior nonmembers versus senior members	0.216
2.	Senior nonmembers versus Other nonmembers	13.568*
3.	Senior nonmembers versus Other members	4.044*
4.	Senior members versus Other nonmembers	0.000
5.	Senior members versus Other members	0.752
6.	Other nonmembers versus Other members	0.303

Two comparisons, (2) and (3), were significant at the .05 level. There were no differences between the medians of senior participants of athletics and the Other nonmember and member groups. The Median Test of Chi-square also disclosed no significant differences between groups when intraclass comparisons were made.

5) Musical Organizations

Three tests were made between members and nonmembers of musical organizations controlling class in college. The N of Other members in musical organizations was not sufficient to warrant the application of the Median Test.

Chi-square figures listed below were calculated from the data on Tables C60 to C62 found in Appendix C. For all three comparisons the .05 level of significance with a figure of 2.71 for a one-tailed test was employed as the critical limit for decision-making.

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*Comparisons significant at .05 level.

1. Senior nonmembers versus senior members 1.271
2. Senior nonmembers versus Other nonmembers 17.335*
3. Senior members versus Other nonmembers 0.0003

The Chi-square figure followed by the asterisk was significant at the .05 level. In the remaining cases, the null hypotheses of no differences were accepted. It should be noted that the large Chi-square figure between senior nonmembers and Other nonmembers closely matched the figure between Seniors and Others described in Phase I of the analysis of the data. The sample for the two groups analyzed in this section was similar to the senior and Others groups with the exception of 15 senior students and 9 Others who were factored out by virtue of being members of musical organizations.

6) Art Organizations

Sample sizes of members, both seniors and Others, were insufficient to warrant application of the Median Test of Chi-square.

7) Religious Organizations

From the total N of 346, tabulations revealed 19 seniors and 52 Others were members of religious organizations.

The computations were made from the data on the 2X 2 forms found in Appendix C on Tables C63 to C68. In all

comparisons, the .05 level of significance was employed with a Chi-square figure of 2.71 as the critical limit. The resultant figures were:

1.	Senior nonmembers versus senior members	0.281
2.	Senior nonmembers versus Other nonmembers	7.643*
3.	Senior nonmembers versus Other members	12.349*
4.	Senior members versus Other nonmembers	0.0000
5.	Senior members versus Other members	1.001
6.	Other nonmembers versus Other members	0.699

In two comparisons, (2) and (3), the outcomes were significant to advance a decision of acceptance of the alternate hypotheses. In all other cases the alternate hypotheses were rejected in favor of the nulls. The computed Chi-square figures for all tests were in the direction predicted.

8) Service Organizations

The number of students engaged in service clubs and activities was inadequate for application of the Median Test.

9) Social Fraternities and Organizations

Analysis of the data may be studied by referring to the discussion of members and nonmembers of fraternities made earlier in this chapter.

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*Comparisons significant at .05 level.

10) Publications

The number of students indicating membership with class in college as controls was not sufficient for purposes of analysis. The expected cell sizes were too small for application of the Median Test of Chi-square.

11) Student Government

The discussion on pages 169 to 172 analyzed the data concerning membership-nonmembership in offices of student government.

12) Intramural Athletics

The results of calculation listed below were derived from data found in Appendix C on Tables C69 to C74.

1.	Senior nonmembers versus senior members	0.063
2.	Senior nonmembers versus Other nonmembers	10.441*
3.	Senior nonmembers versus Other members	9.011*
4.	Senior members versus Other nonmembers	6.827*
5.	Senior members versus Other members	4.781*
6.	Other nonmembers versus Other members	0.131

Again the findings indicated that intergroup analysis by class in college differentiated the population concerning beliefs. Intraclass analyses of both the groups of Seniors and Others led to the acceptance of the null hypothesis in both instances. However, the calculated figure was

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*Comparisons found to be significant at .05 level.

reversed in direction in the test between Other nonmembers and Other members.

13) Other Organizations

The final set of tests included in the analysis of members-nonmembers in on-campus clubs and activities was performed on the data categorized "Other organizations." Sixty-one students indicated membership in "Other organizations," of which 23 were seniors and the remaining 38 students under the classification of Others.

Analysis consisted of the application of the Median Test with 1 degree of freedom and .05 as the level of significance. The data are recorded on the 2 X 2 tables, Tables C75 to C80 in Appendix C. A summary of the resultant Chi-square figures are entered below.

1.	Senior nonmembers versus senior members	2.003
2.	Senior nonmembers versus Other nonmembers	10.232*
3.	Senior nonmembers versus Other members	5.129*
4.	Senior members versus Other nonmembers	.787
5.	Senior members versus Other members	.796
6.	Other nonmembers versus Other members	.304

The comparisons between senior nonmembers and senior members resulted in a Chi-square figure of 2.003 which warranted a decision to suspend judgment pending the

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*Comparisons significant at .05 level.

availability of further evidence. In each of the remaining cases, the alternate hypothesis was rejected in favor of the null.

Off-campus clubs and activities. In the analysis of membership-nonmembership in off-campus clubs and organizations controlling class in college there were twelve seniors and sixteen Others who indicated active participation.

Tables C81 to C86 in Appendix C are the 2 X 2 form from which the Chi-square figures were computed. Tests of significance at the .05 level with 1 degree of freedom were applied to all outcomes. The resultant figures which follow are in the order of the listed subhypotheses.

1.	Senior nonmembers versus senior members	0.874
2.	Senior nonmembers versus Other nonmembers	12.006*
3.	Senior nonmembers versus Other members	5.584*
4.	Senior members versus Other nonmembers	0.000
5.	Senior members versus Other members	1.312
6.	Other nonmembers versus Other members	0.639

Comparisons between senior nonmembers and both Other nonmembers and members resulted in Chi-square figures which were significant at the .05 level. In all other comparisons the null hypotheses were accepted.

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*Comparisons significant at .05 level.

Phase II: Part C; The Analysis of Data Concerning Responses to the Educational Viewpoints Inventory

Following the format developed in the preceding chapter the discussion of this section will focus on the analysis of the data related to the tests of hypotheses regarding patterns of viewpoints of education. Four categories were operationally identified. These were labeled: (1) progressivist, (2) logical empiricist, (3) essentialist, and (4) unclassified. Table 40 includes the summary data from which Chi-square tests were computed.

Table 40. Summary data: Frequency and percentage of students in one of four categories of patterns based in educational viewpoints with class in college controlled

Educational Viewpoint Category	Frequency and Percentage by Class in College			
	Others		Seniors	
	Frequency	%	Frequency	%
1. Progressivist	44	20.65	38	28.57
2. Logical Empiricist:				
a. High Estimate	109	51.17	54	40.60
b. Low Estimate	73	34.27	41	30.82
3. Essentialist	1	0.004	0	0.00
4. Unclassified	59	27.69	41	36.69
Totals	213		133	

A. Class in College Controlled

1) Progressive-oriented seniors versus progressive-oriented Others. The analysis attempted to test the hypothesis stated as follows:

> The proportion of progressive-oriented seniors is significantly larger than progressive-oriented Others.

The statistical hypotheses used were:

H_o: There is no significant difference between the proportions of progressive-oriented seniors and progressive-oriented Others derived from the Educational Viewpoints Inventory for the study of patterns of responses.

H_1: The proportion of progressive-oriented seniors is significantly larger than the proportion of progressive-oriented Others.

Data as shown on Table 41 were used in the computation of Chi-square. The resultant figure derived from the calculations did not exceed the .05 probability level figure of 2.71 but was greater than the .10 probability level figure of 1.6 with 1 degree of freedom. The decision was made to suspend judgment until further evidence is made available. It should be noted that the direction of the test result was similar to the prediction made in the hypothesis. When not corrected for continuity, the Chi-square figure equaled 2.814 which was significant at the .05 level for a directional test.

2) Logical empiricist-oriented seniors versus logical empiricist-oriented Others. Three tests of Chi-square were applied on the data for the hypotheses listed below.

Table 41. Test of Chi-square between progressive-oriented seniors and progressive-oriented Others in response to the Educational Viewpoints Inventory

Patterns	Seniors	Others	Totals
Progressive-oriented	38	44	82
Other Viewpoints	95	169	264
Totals	133	213	346

$df = 1$

$X^2 = 2.397$

(1) The proportion of logical empiricist-oriented seniors is larger than the proportion of logical empiricist-oriented Others.

(2) The proportion of logical empiricist-oriented seniors with predictable patterns is significantly larger than the proportion of logical empiricist-oriented Others.

(3) The proportion of logical empiricist-oriented Others with less predictable patterns is significantly larger than the proportion of logical empiricist-oriented Others within the same category.

The null and alternate statistical hypotheses for hypotheses (1) and (2) of the above list were stated:

H_o: There is no significant difference between the proportions of logical empiricist-oriented seniors and logical empiricist-oriented Others derived from responses to the Educational Viewpoints Inventory for the study of viewpoint patterning.

H_1: The proportion of logical empiricist-oriented seniors is significantly larger than the proportion of logical empiricist-oriented Others.

For the less predictable groups, hypotheses (3), the null and alternate hypotheses were structured thus:

H_o: There is no significant difference in the proportions of logical empiricist-oriented Others and logical empiricist-oriented seniors with less predictable patterns derived from responses to the Educational Viewpoints Inventory.

H_1: The proportion of logical empiricist-oriented Others with less predictable patterns is larger than the logical empiricist-oriented seniors proportion.

Computations were made from the data as shown on Tables 42 to 44. The .05 level of significance with 1 degree of freedom was used to interpret the Chi-square figures. The test revealed:

1. The Chi-square figure between senior and Other logical empiricist-oriented groups was significant at the .05 level. However, the derived figure was opposite in direction from the prediction.

2. The Chi-square figure between senior and Other logical empiricist-oriented groups of predictable patterns did not equal or exceed the .05 level of significance. As a result, the null hypothesis was accepted. The Chi-square figure was .044.

3. The Chi-square figure between Other and senior logical empiricist-oriented groups of less predictable patterns exceeded the .05 level of significance. The alternate hypothesis was accepted. Chi-square equaled 2.859.

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Table 42. Test of Chi-square between senior and Other logical empiricist-oriented groups in response to the Educational Viewpoints Inventory

Patterns	Seniors	Others	Totals
Logical Empiricist-oriented	54	109	163
Other Viewpoints	79	104	183
Totals	133	213	346

df = 1

$X^2 = 3.260$

Table 43. Test of Chi-square between senior and Other logical empiricist-oriented groups of more predictable patterns in response to the Educational Viewpoints Inventory

Patterns	Seniors	Others	Totals
Logical Empiricist-oriented	41	73	114
Other Viewpoints	72	140	232
Totals	133	213	346

df = 1

$X^2 = 0.044$

Table 44. Test of Chi-square between Other and senior logical empiricist-oriented groups of less predictable patterns in response to the Educational Viewpoints Inventory

Patterns	Seniors	Others	Totals
Logical Empiricist-oriented Less Predictable	13	36	49
Other Viewpoints	120	177	297
Totals	133	213	346

df = 1

$X^2 = 2.859$

3) Senior unclassified versus Other unclassified students. The test between senior and Other students with unclassified patterns was based on the hypothesis that the proportion of unclassified seniors would be smaller than the proportion of unclassified Other students. The following alternate and null hypotheses were developed:

H_o: There is no significant difference between the unclassified seniors and unclassified Others in terms of patterns derived from responses to the Educational Viewpoints Inventory.

H_1: There is a significant difference between the proportion of unclassified Others and unclassified seniors with the proportion of the former being larger.

The data from Table 45 were used to compute Chi-square. The resultant figure did not equal nor exceed the .05 level of significance with 1 degree of freedom.

Table 45. Test of Chi-square between Other and senior unclassified students in terms of patterns derived from responses to the Educational Viewpoints Inventory

Patterns	Seniors	Others	Totals
Unclassified Students	41	59	100
Other Viewpoints	92	154	246
Totals	133	213	346

$df = 1$

$X^2 = 0.252$

Therefore, the alternate hypothesis was rejected in favor of the null. The direction of the Chi-square figure was reversed from the direction predicted in the hypothesis.

4) Essentialist-oriented seniors versus essentialist-oriented Others. Comparisons could not be made due to insufficient data.

B. Analysis of Data of Senior and Other Students Controlling the Factor of Transfer-Nontransfer

In this developmental phase of the investigation, the patterns of viewpoints of seniors and Others were subjected to analysis by the additional control of the factor specified as transfer-nontransfer status. The following table depicts the frequencies of the various categories.

Table 46. Summary Table: Patterns of educational viewpoints of seniors and Others controlling the factor of transfer-nontransfer and expressed in terms of frequency

Patterns	Seniors		Others	
	Transfer	Non-transfer	Transfer	Non-transfer
1. Progressivism	19	19	14	30
2. Logical Empiricism	34	20	48	61
a. More Predictable	25	16	38	35
b. Less Predictable	9	4	10	26
3. Essentialism	0	0	1	0
4. Unclassified	28	13	14	45
Totals	81	52	77	136

1) Progressive-oriented pattern comparisons. The first set of comparisons attempted to ascertain whether differences existed between the various groups of students with progressive-oriented patterns. Tables D1 to D6 in Appendix D depict the data in the form from which Chi-square figures were calculated. Below is a list of the computed figures; directional hypotheses favored the first named group of each comparison.

1. Senior nontransfer versus senior transfer 2.053
2. Senior nontransfer versus Other transfer 4.572*

*Comparisons significant at the .05 level.

3. Senior nontransfer versus Other nontransfer 4.630*
4. Senior transfer versus Other transfer 0.346
5. Senior transfer versus Other nontransfer 0.004
6. Other transfer versus Other nontransfer 0.255

The results of the calculations revealed significant differences between the proportions of progressive patterns of senior nontransfer and both of the groups composed of Other students. Comparison between the proportions of senior transfers and senior nontransfers disclosed a Chi-square figure greater than the figure for the .10 level but less than that required for the .05 level of significance. The decision was made to suspend judgment until additional evidence is made available. In all other cases, the null hypotheses were accepted.

2) Logical empiricist-oriented patterns comparisons. The responses in the logical empiricist-oriented patterns were subjected to six tests of Chi-square found on Tables D7 to D12 in Appendix D. The resultant Chi-square figures were:

1. Senior nontransfers versus senior transfers 0.049
2. Senior nontransfers versus Other transfers 6.173*
3. Senior nontransfers versus Other nontransfers 0.391
4. Senior transfers versus Other transfers 5.766*

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*Comparisons significant at the .05 level.

5.	Senior transfers versus Other nontransfers	0.073
6.	Other transfers versus Other nontransfers	5.336*

The findings of the analyses pointed out that the comparisons between the proportions of logical empiricist-oriented (1) senior transfers versus Other transfers, (2) senior transfers versus Other transfers, and (3) Other nontransfers versus Other transfers were significant at the .05 level. In all cases, the proportions of logical empiricist-oriented Other transfers was larger than the compared groups. Thus, in comparisons (2) and (4) the direction of the outcome was reversed from that predicted. In all other comparisons the null hypotheses of no differences were accepted. However, the predicted direction was reversed in the cases of (3) and (5).

Six additional tests were applied to the data concerning the predictable-less predictable factor in response to patterns of the logical empiricist-oriented group. The predictable groups consisted of responses more easily identified through the operational definition defined in an earlier chapter. The less predictable group included individuals with patterns which were classified as logical empiricists but with response patterns that were not anticipated in the development of the models and/or without large frequencies within a given pattern.

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*Comparisons significant at the .05 level.

The data in Appendix D on Table D13 to D18 were subjected to Chi-square analysis. In the six comparisons, the .05 level of significance with 1 degree of freedom was used for decision-making. The results of calculation are listed below.

1.	Senior nontransfers versus senior transfers	0.043
2.	Senior nontransfers versus Other transfers	0.000
3.	Senior nontransfers versus Other nontransfers	2.406
4.	Senior transfers versus Other transfers	0.109
5.	Senior transfers versus Other nontransfers	1.802
6.	Other transfers versus Other nontransfers	4.822*

The derived figures indicated significant differences to exist between the proportions of predictable logical empiricist-oriented groups of Other transfers and Other non-transfers. Reference to the Chi-square Table (2) resulted in the decision to suspend judgment concerning the comparisons between (a) senior nontransfers and Other nontransfers and (b) senior transfers and Other nontransfers. In the remaining cases, the alternate hypotheses were rejected in favor of the null. The computed Chi-square figure was reversed from that made in the prediction for the test between senior transfers and Other transfers.

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*Comparisons significant at the .05 level.

3) Essentialist-oriented pattern comparisons. No tests were made of the essentialist pattern. One student from the total sampling of 346 was classified as essentialist-oriented. This number was inadequate for testing purposes.

4) Unclassified patterns comparisons. The data were compiled on 2 X 2 tables and are documented in Appendix D, Tables D19 to D24. The .05 probability level with 1 degree of freedom was used in each case to determine significance. Summarized below are the Chi-square figures.

1.	Other nontransfers versus Other transfers	4.735*
2.	Other nontransfers versus senior transfers	0.056
3.	Other nontransfers versus senior nontransfers	0.805
4.	Other transfers versus senior transfers	2.378
5.	Other transfers versus senior nontransfers	0.629
6.	Senior transfers versus senior nontransfers	0.947

The null hypothesis was rejected in favor of the alternate in the comparison between Other nontransfers and Other transfers, and the direction of the calculated figure was reversed from the prediction made in the hypothesis. Comparisons (2), (4), and (5) were found to be in the opposite direction from the predictions. The resultant figure between Other transfers and senior transfers also indicated the need to suspend judgment until further evidence is made

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*Comparisons significant at the .05 level.

available as the calculated Chi-square figure fell in the area of doubt. Comparisons between the various groups in (2), (3), (5), and (6) resulted in the decision to accept the null hypothesis in all cases.

Summary of the Chapter

The text of the chapter conveyed the results of the tests applied to the data. The format included: (1) the presentation of the summary statistics of the data, and (2) the results of the analysis of the data derived from the tests of the hypotheses. The presentation of the summary statistics was designated Phase I and included (a) the enumeration of scores derived from the instruments into various categories and (b) the calculation of reliability figures for the Educational Viewpoints Inventory.

Phase II was divided into three parts to facilitate reporting and reading of the content of the analysis of the data. Part A consisted of the tests of hypotheses in terms of membership-nonmembership in various activities on the basis of scores derived from the application of Swanson's Inventory. Part B included the subtests generated as a result of significant findings revealed in Part A. The factor of class in college, senior-Other, was controlled in the analysis of data in this section. The final aspect of the analysis of the data, Part C, focused discussion of

the exploratory examination of viewpoints in terms of patterns from scores derived from the Educational Viewpoints Inventory.

In brief, the analyzed data tended to substantiate the hypothesis that students in training would manifest viewpoints advocated by teacher educators. In this particular case the best indicator, class in college, revealed significant differences between students being initiated into the training program and those who were near completion of that program.

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CHAPTER VI

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary of the Study

The investigation was formulated to test the hypothesis: Enrollment in an industrial arts curriculum by students involves the assimilation of educational viewpoints advocated by industrial arts teacher educators. Sub-purposes of the study were (1) to develop and incorporate the technique of research by Osgood into the investigation, (2) to extend the research conducted by Swanson, and (3) to establish a theoretical base from which to do further research.

Two basic assumptions were posited for the study. These were (1) that students enrolled in industrial arts programs held views concerning the practice of teaching and (2) that the framework of research and the technique of analysis by Swanson did, in fact, measure educational viewpoints.

A review of the literature included readings regarding membership in groups as related to occupational behavior. Emphasis was placed on studies and opinions concerning the development of occupational ideology. The review also

embraced a perusal of literature concerning the measurement of philosophy of education of students and graduates in industrial arts programs. The readings revealed the study undertaken by Swanson to be the single piece of research which attempted to measure educational viewpoints in industrial education.

The paucity of reported studies of measurement of educational viewpoints in industrial education necessitated reading of reports of research in other educational areas to supplement and clarify the position of research concerning the measurement of educational viewpoints. Conclusions of studies indicated that educational viewpoints could be measured on a bi-polar continuum. In some cases more than two viewpoints were defined for analytical purposes.

The final phase of the review of literature encompassed a study of college student attitudes and values as related to membership in various groups. It was the opinion of a substantial number of researchers that there is a relationship between membership in selected student subcultures and viewpoints.

The report was next extended to a discussion of the theoretical construct and hypotheses employed in this study. Hypotheses to be tested were evolved from the construct based on the theme that students are members of one or more subcultures within the social system of the campus community.

It was theorized that students enrolled in industrial arts programs were members of the vocational student subculture, more specifically the vocational student teaching subculture. Further, it was speculated that teacher education programs foster the development of occupational ideologies or ideology derived in part from philosophies of education.

Hypotheses related to the vocational subculture of teaching were stated in the form:

Hypothesis 1:

> Senior students who have finished practice teaching will tend to be more progressive-oriented than Others when the sample includes only industrial arts majors.

Hypothesis 2:

> Students intending to become general industrial arts teachers tend to respond towards the progressive end of the continuum in larger proportions than students who perceive themselves as specialists or single content area teachers.

Hypothesis 3:

> Members of industrial arts clubs which are organized to foster interest and ideals of the occupation will tend to be more progressive in outlook than nonmembers.

Hypothesis 4:

> Members of honorary clubs in the field of education and industrial arts will tend to be more progressive in educational viewpoints than nonmembers.

Other hypotheses were set forth to ascertain whether membership-nonmembership in nonvocational clubs and organizations

would result in differences in educational viewpoints held by the various groups.

Apparent weakness in the method of analysis for interpretive purposes prompted the extension of the study to include a technique to study responses on the basis of patterns of educational viewpoints. Three patterns were identified and defined. These were: (1) progressivism, (2) essentialism, and (3) logical empiricism. A fourth category was termed "unclassified" and encompassed all students whose response pattern did not fit the defined patterns of the three viewpoints.

The hypotheses for the developmental aspect of the investigation were as follows:

Hypothesis 21:

> The proportion of progressive-oriented seniors is significantly larger than progressive-oriented Others.

Hypothesis 22:

> The proportion of logical empiricism-oriented seniors is significantly larger than logical empiricism-oriented Others.

Hypothesis 23:

> The proportion of Other students with essentialism-oriented patterns is significantly larger than the proportions of senior students with the views.

Hypothesis 24:

> The proportion of Other students with unclassified viewpoints is larger than the proportion of senior students classified the same.

The techniques employed for conducting the research were described after the hypotheses were stated. Two instruments, Swanson's Inventory and the Educational Viewpoints Inventory, were the primary instruments for data collection. Swanson's Inventory was a force-choice instrument consisting of sixty-five paired items based in an operational definition of educational philosophies.

The Educational Viewpoints Inventory intended to identify students from their response patterns to selected terminology associated with various educational practices and stances. This second instrument was structured using the technique described by Osgood et al. Single patterns were identified for both progressivists and essentialists. A total of fifteen possible patterns were determined for the logical empiricist-oriented position. Six of the fifteen selected patterns of logical empiricism were theorized to be the probable patterns of responses by students.

The Personal Data Sheet and the sample studied in this investigation were described following the discussion concerning instrumentation. The instruments were administered to a sample of approximately 350 students majoring in industrial arts education during the school year 1964-65 at State University College, Oswego, New York. The data collected was tabulated and subjected to Chi-square tests.

The report of the analysis of data consisted of two major phases. Summary statistics were presented in the

initial phase. A total of 346 responses to the instruments were found usable. Reliability for the Educational Viewpoints Inventory was calculated in terms of item probability.

Phase II was divided into three parts. Part A included the analysis of the twenty hypotheses. The computations revealed the following Chi-square figures with one degree of freedom for the following hypotheses:

Hypothesis 1 (see page 209) 18.152

Hypothesis 2 758

Hypothesis 3 . . . . . 1.672

Hypothesis 4 . . . . . 1.298

From the list presented above it was surmised that the senior-Other factor was the only category which differentiated students on the basis of educational viewpoints.

Membership in association classified under nonvocational student subcultures disclosed the following figures:

1. Commuters versus noncommuters 3.503
2. Veterans versus nonveterans 1.228
3. Transfer versus nontransfer 0.00008
4. Membership versus nonmembership:
   a. by number of membership 0.023
   b. by specified club or group:
      1) special interest groups . . . 0.014
      2) intercollegiate athletics . . 0.637
      3) musical organizations 0.044
      4) art organizations . . . . . No study

5) religious organizations . . . 2.551

6) service organizations . . . . No study

7) social organizations (seniors only) 0.061

8) publications 0.037

9) student government 0.635

10) intramural athletics 0.011

11) other student organizations . 0.971

4. Off-campus clubs 0.807

All computed Chi-square figures revealed the responses to Swanson's Inventory did not differentiate students on the factor of membership-nonmembership in nonvocational associations with the exception of (1) commuter-noncommuter and (2) membership-nonmembership in religious organizations. The significance of the difference between commuters-noncommuters was found to be affected by the large proportion of seniors in the commuting category. The large Chi-square figure though not significant of the membership-nonmembership in religious organizations may be a factor in need for further study.

Subtests revealed significant Chi-square figures in many instances between seniors and Others on the factors listed above. More important the analysis substantiated the theory of the development of occupational ideology when significant differences in viewpoint were not apparent with any

degree of consistency when intraclass analyses were made for the various factors.

The analysis of data for hypotheses of Phase II, Part C disclosed the following Chi-square figures:

Hypothesis 21:

The proportion of progressive-oriented seniors is significantly larger than progressive-oriented Other students.

Chi-square figure corrected for continuity. 2.397
Not corrected for continuity. 2.814

Hypothesis 22:

The proportion of logical empiricism-oriented seniors is significantly larger than logical empiricism-oriented Others.

Chi-square figure corrected for continuity. 3.600*

Hypothesis 23:

The proportion of Other students with essentialism-oriented patterns is significantly larger than the proportions of senior students with the same views.

No test was made due to insufficient sampling of the essentialist-oriented pattern for both groups.

Hypothesis 24:

The proportion of Other students with unclassified viewpoints is larger than the proportion of senior students classified the same.

Chi-square figure corrected for continuity. 0.252*

---

*The calculated figure was reversed from the predicted direction.

Tests were also calculated controlling the transfer-nontransfer status between senior and Other students. Some significant figures were derived which indicated senior nontransfer students to be proportionately larger as a progressive group. Secondly, both senior transfers and nontransfers and Other nontransfer students were found to be less logical empiricist-oriented than Other transfer students. No significant differences were found between Other nontransfer and both senior groups for the unclassified patterns. However, a Chi-square figure of 2.378 between Other transfers and senior transfers prompted the decision to suspend judgment until further evidence is made available. In the preceding case the predicted direction was reversed from the calculated figure. A significant Chi-square figure was obtained between Other transfer and Other nontransfer groups with the proportion of unclassified students being larger for the nontransfer group.

Conclusions

The findings derived through the analysis of the data supported the following conclusions. These conclusions apply only to the sample studied for school year 1964-65. It would be prudent to interpret the conclusions as preliminary work to the elusive and difficult task of assessing the belief patterns of undergraduate students in industrial arts education.

1. Senior students enrolled in industrial arts programs tend to manifest behavior more in keeping with the viewpoint of Industrial Arts Teacher Educators than do freshmen and new transfers.

2. There is a tendency for students scoring in the extreme ends of the Swanson Inventory to be (1) generalists at the progressive end of the continuum and (2) specialists at the less progressive end of the continuum.

3. Students who have memberships in two professional industrial arts clubs tend to be proportionately more progressive than nonmembers.

4. All factors of membership-nonmembership in associations of the nonvocational subculture were not differentiated by viewpoints. The exception to this was the factor of membership in religious organizations which is in need of further study before a conclusive decision may be made.

5. From the preceding statement it is claimed that the instruments employed in this particular investigation did measure occupational ideology and that the instruments were not able to differentiate students on factors which were categorized nonvocational.

6. It was found that senior nontransfer students were more progressive than senior transfer, Other transfer, and Other nontransfer student groups.

7. Senior transfer students were proportionately more progressive than Other transfer and Other nontransfer groups.

8. The two preceding conclusions further indicate that students with more time on campus and being in the program of training longer, tend to be closer in viewpoint of Industrial Arts teacher educators.

9. Membership in religious organizations tended to be less progressive than nonmembers. However, as with other findings of the study, the largest difference was between senior nonmembers and Other members.

10. Senior students tended to have proportionately more progressive patterns than Other students.

11. The students in the category of Others were found to have a larger proportion of students with less predictable logical empiricist-oriented viewpoints in terms of patterning.

12. The factor of membership-nonmembership in honorary scholastic organizations did not differentiate students by educational viewpoint.

13. The exploratory reliability studies of items indicated some stability of educational viewpoint responses in terms of patterning.

14. The summary statistics disclosed the computed figures and those reported by Swanson to be distributed similarly. As expected the figures derived by Swanson for graduate students and teachers were more progressive than that which was gathered for this study.

15. The findings from the analysis of data support the claim made by Bruce (1) who indicated that there was a sizable percentage of students with inconsistent viewpoints.

Recommendations and Implications

Recommendations of the study. The recommendations to follow stem from the findings and problems encountered in the process of the investigation.

1. The inventories ought to be part of the evaluative battery for pre- and/or post-student teaching evaluation.
   a. It is recommended that the inventories be used in conjunction with other evaluative devices in assessing student teaching competency.
   b. The student's responses should be interpreted to to the individual.

2. The following recommendations are made for further study of the problem concerning the measurement of educational viewpoints of individuals who are preparing to become industrial arts teachers.
   a. More extensive research concerning methods and classification of educational viewpoints should be conducted.
   b. Recently developed techniques of research and other methods of collection and analysis of data may reveal significant new interpretations in studies of educational viewpoints.
   c. Longitudinal studies should be undertaken to ascertain whether differences in viewpoints may be attributed to changes of viewpoints within individuals and/or through other selective factors of the educational system.
   d. Item analysis should be extended to enable strengthening the Educational Viewpoints Inventory. Also, further studies should be undertaken to establish the reliability of the Educational Viewpoints Inventory.
   e. Extensive studies over larger populations of potential teachers, students in training, and teachers in the field should result in more comprehensive generalizations applicable to the occupation.

f. Further studies should be undertaken to determine relationships between (1) creativity and viewpoints of education, (2) personal preferences to particular curriculum patterns and educational viewpoints, and (3) degree of specialization in industrial education to educational viewpoints.

g. It is recommended that studies of educational viewpoints be extended to other undergraduates programs to establish a broader base from which evaluation of teaching may be made of such programs.

h. Studies should be undertaken to assay the probable proportions of students and teachers with inconsistent and/or consistent viewpoints which were not defined in the study.

i. The relationship between the factor of membership-nonmembership in religious organizations in relationship to educational viewpoints ought to be studied in detail.

j. It is recommended that the definitions of viewpoint patterns be extended to more operational aspects of education to enable the development of a more precise instrument.

Implications of the study. The conclusions of the investigation were instrumental in the outgrowth of some fundamental questions. One of the concerns emanating from the findings was the degree of appropriateness of classifying the viewpoints of industrial arts teachers and teacher educators into the classic categories of essentialism and progressivism. The results of the investigation suggest that pure-typed essentialists are few in number compared to students holding other viewpoints. Swanson's distribution of graduate students and practicing teachers also reflects a paucity of essentialists among personnel engaged in industrial education activities. The tentative results of the developmental aspect of patterning of viewpoints further substantiates the hypothesis that essentialists constitute a small minority of the total number of students in the training process.

The results of analysis indicates that the essentialist-progressivist continuum does not apply in relation to the distribution of responses of educational viewpoints of industrial arts teachers. A more precise categorization of viewpoint types seems to be between progressivists on the one hand, and logical empiricists on the other. It is also emphasized that the number of individuals with unconfirmed viewpoints is substantial among undergraduates and perhaps a third category could encompass the unclassified group.

The implication concerning recent trends in curriculum research is the seeming disproportionate emphasis of studies based in the logical empiricist point of view. For example, the two large scale curriculum projects at Stout State University (2) and Ohio State-Illinois Universities (3) are representative of the research based in logical empiricism. The emphasis on (1) hypothetico-empirical constructs, (2) the concern of definitions characterized by clarity and conciseness, and (3) the delineation of cognitive elements of knowledge from methodology of teaching are the hallmarks of solving educational problems via empiricism.

On the basis of the findings it is suggested that curriculum research from other points of view be instigated to accommodate individuals who may not agree with the tenets of the above points of view. Second, the participants of curriculum research ought to specify the viewpoint on which the research endeavor is premised. Too often research in industrial arts tends to be studied from positions which are not made explicit and/or are based in somewhat inconsistent thought. It is recommended that curriculum problems be attacked from a number of viewpoints to accommodate as many individuals with varying viewpoints. It is the writer's opinion that the very structure of industrial arts curriculum as it now stands selects out individuals who deviate in viewpoint from the dominant positions of progressivism and logical empiricism.

Another implication of the study suggests that assessment of student viewpoints may assist in the evaluation of industrial arts teacher education programs. The lack of difference in proportions of seniors and Others under the classification of "unclassified" might be interpreted to mean that the industrial arts teacher education program does not succeed in changing the student's point of view regarding education. If a program is committed to a particular point of view, it could be theorized that the goal of four years of industrial teacher education courses ought to diminish the proportion of unclassified students and to enlarge the proportion of students in the category of the advocated viewpoint reflected by the curriculum.

An implication expressed in form of questions may be asked as to the difference in proportions between the seniors and Others concerning the logical empiricist and progressive groups. Why do students in the senior category seem to be more progressive than Other students; and is the change of proportions based in a shift from logical empiricism to progressivism? It is hypothesized that teacher training institutions tend to favor the progressivist position. Those students who do shift are those who have not solidified a point of view but in the same vein are oriented to logical empiricism and progressivism.

From the preceding discussion it is suggested that teacher educators examine the issue whether a program in

industrial arts ought to pursue a single viewpoint or whether it is more appropriate for students to experience the alternative possibilities of curriculum structuring. The case may be made for either position regarding the issue at hand but it is the writer's feeling that too often in industrial arts education the potential teacher is not given the opportunity to examine questions concerning the rationale behind the structuring of content for teaching purposes. Attendant to this opinion is the belief that the organization of industrial arts programs at the undergraduate level limits inquiry, dialogue, and criticism of views other than those which are not a parcel to the program in question.

The final implication of the investigation suggests the need for more attempts of research in the area of educational viewpoints as related to industrial arts. The review of literature revealed that the relationship between the evaluation of operational aspects of industrial arts and philosophical positions have been neglected. In this investigator's judgment (1) the interpretive historical studies, (2) the studies of curriculum, and (3) the research concerning methodology and psychology of teaching are of lesser quality because of the lack of more precise operational definitions of various philosophical views which gird the educational arena.

The lack of sufficient definitions of philosophy in terms of industrial arts has negated the growth increment of

of new knowledge from different perspectives. For example, there ought to be an operational definition of existentialism as related to industrial arts. From such an operational definition might arise studies of curriculum, history, and methodology with a different flavor. The danger accompanying the neglect of identifying relationships between philosophy and practices is that the fund of knowledge derived may be inappropriate and irrelevant to the teaching-learning situation as viewed by the teacher.

In closing, the findings, conclusions, and recommendations ought to be viewed as developmental. It was intended that the content of this report be viewed as an attempt to extend research of industrial arts in the direction where practices of the teaching situation could be equated with particular viewpoints. Thus viewpoints, being part of the occupational ideology of industrial arts teaching, would lend itself in the evaluating process of students and teachers.

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APPENDICES

APPENDIX A

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APPENDIX A1

INVENTORY OF VIEWPOINTS ON EDUCATION

FORM A

ROBERT SWANSON

STOUT STATE COLLEGE, MENOMONIE, WISCONSIN

DIRECTIONS: This inventory consists of a series of pairs of statements of opinions, beliefs, and proposed actions in educational situations. Read each pair carefully. You may not fully agree or disagree with either statement. The choice that you generally accept may represent a more extreme viewpoint than you would propose. Decide which statement represents an **emphasis** most nearly like yours. Then, on the answer sheet, blacken the letter (a or b) that corresponds to your choice. Some of the statements may seem ambiguous; interpret them for the general situation and in a sense most logical to you. Please react to all items.

1

a. The elements of content in a subject area remain about the same, regardless of course objectives.
b. The objectives for a course determine what should be considered elements of subject matter.

2

a. The teacher should serve as an authority in his subjects. It is his job to bring facts and skills to the student.
b. The teacher should serve as a fellow investigator, though perhaps as a leader in the investigation.

3

a. The subjects of science, math, English, and history are basically more valuable than vocational subjects.
b. The high school has a duty to offer vocational preparation even at the expense of some science. math, English, and history.

4

a. A beginning course must include the same fundamentals regardless of whether it is a terminal course or one preparing for further work in the subject.
b. The content of a course for terminal purposes should be basically different from that of a course preparing for further work.

5

a. Objectives should not be claimed unless it can be shown that they can be achieved.
b. Objectives are something to be striven toward: they derive value independently of students' attainment of them.

6

a. Content most immediately useful to students in solving their problems should be taught first.
b. Content found to be most frequently useful in later learning should be taught first.

7

a. Problem solving is impossible without the possession of certain knowledges and skills; the principal job of the school is to build these basic elements.
b. Problem solving is possible and desirable at all levels of learning because it is the problems that indicate the elements to be taught.

8

a. Objectives require constant re-evaluation against changing conditions.
b. Constant restatement of objectives is often a waste of time; it would be better to spend the time in a more careful study of the content and new scientific developments in it.

9

a. Knowledge of educational psychology is important in determining objectives.
b. Educational psychology is important in selecting teaching methods but not particularly in specifying objectives.

10

a. There should be relatively fixed standards to be attained before issuing a high school diploma.
b. Even minimum standards are not desirable because of the varying needs and abilities of students.

11

a. Facts and skills are either correct or incorrect.
b. What is regarded as correct is determined somewhat by the use that is to be made of facts and skills.

12

a. Objectives serve as general guides to the selection of content, but specific items of content are determined from within the content itself.
b. Objectives function in determining what should be taught and how it should be taught.

13

a. Standards based upon group achievement, even of large groups, are basically unsound; standards must come from a scientific study of the subject matter.
b. Standards must be based on the use to be made of the subject matter.

14

a. Student interest should be exploited in selecting teaching methods but little in content selection.
b. Student interest is a rather large factor in selecting content.

15

a. A comprehensive evaluation program can be a valuable aid to revising both objectives and content.
b. An evaluation program tells only what the student learned, not what he should learn.

16

a. In a good test the answers will be definitely either "right" or "wrong."
b. One "answer key" cannot be used to mark all tests if the materials are at all complicated.

17

a. The score on an evaluative device should in no way reflect the personal opinion of the teacher.
b. There should be subjectivity to evaluation; it is just a question of how much.

18

a. Honest student opinion of achievement is at least as valuable as teacher evaluation because the student can judge in terms of his needs and interests.
b. Even conscientious self-evaluation by the student has questionable value because the student is not in the "expert" position of the teacher.

19

a. Uniform standards of achievement throughout a school are desirable.
b. Uniform standards are neither desirable nor practical because of the individual needs and abilities of the students.

20

a. The most efficient evaluation of student achievement will be in terms of ability to recall important facts and skills.
b. Facts and skills have little meaning and value outside of their use in solving problems.

21

a. Individual differences among students call for variation in teaching methods but not in the basic content and objectives.
b. The same content and objectives cannot apply for all students or even for a large majority of them.

22

a. After the basic skills of reading, writing, and arithmetic have been taught, practically all other content should be organized in terms of problems to be solved.
b. The most efficient way to teach (and learn) is to analyze the basic essentials and teach them, drill them if necessary.

23

a. The elective system allows each student to select a program suited to his needs.
b. The elective system has merit largely because it increases student interest; otherwise it would be just as well to have a carefully planned curriculum for all.

24

a. The main worth of the school's content is in solving life problems.
b. There is some very "impractical" content that should be included in the curriculum.

25

a. A curriculum based on a careful study of the needs of youth twenty years ago would probably be quite different from a curriculum based on a careful study of the needs of youth today.
b. A study of the needs of youth today may reveal new approaches to teaching and new problems to be solved but the fundamentals of subject matter would probably not be changed much.

26

a. The best way to improve teaching is to give teachers more advanced work in their subject fields even to the elimination of many of the "education" courses.
b. Study of ways of teaching and organizing subject matter is more fruitful in improving teaching than increased formal study of subject matter.

27

a. That which is easiest to learn should be taught first.
b. What should be taught first must be determined by the subject matter.

28

a. If artificial incentives, such as marks, contests, etc., aid the student to master the fundamentals they should be employed.
b. Ordinarily, it will not be necessary to employ artificial incentives if the content is worthwhile.

29

a. Content that cannot be shown to be useful rather immediately should be dropped.
b. Much worthwhile content cannot be shown to be useful, at least very directly.

30

a. With most subjects, after a teacher has taught a course several times few changes will be needed in content and organization though new illustrations and problems should be incorporated.
b. Variable needs and conditions call for frequent changes in content and organization in most courses nearly every time they are taught.

31

a. Knowledge has no inherent value; its value is determined by its usefulness.
b. Usefulness is no index of the worth of knowledge; knowledge is either true or false.

32

a. Except for the cost, it would be a good idea to have a different curriculum for almost every student.
b. The school should act as a stabilizing influence by giving students a common background.

33

a. High school objectives in California should be quite similar to those in Maine or Wisconsin.
b. Different localities may require different sets of educational objectives.

34

a. It is inefficient for students to work out "solutions" to problems if the answers are known; the teacher should teach what is correct and make sure that the students learn it.
b. Many important objectives are attained by working out problem solutions even if fewer facts are learned.

35

a. Modernizing a curriculum is mainly a process of incorporating current problems as devices to illustrate the fundamentals.
b. The "essentials" to be taught change with changing conditions.

36

a. Even though perfectly objective methods of evaluating the "intangible" objectives are not available, attempts should be made to evaluate their attainment and they should be factors in marking.
b. It is more justifiable to mark almost entirely on the basis of facts and skills learned.

37

a. A periodic reappraisal of objectives and content is necessary not so much because the basic elements have changed but because our knowledge of them has been refined and extended through scientific discovery.
b. A periodic reappraisal of objectives and content is necessary because the needs of students and society may have changed and altered the purposes served by the school.

38

a. Science functions mainly to uncover knowledge.
b. Science, by opening new avenues to learning, actually aids in the creation of knowledge.

39

a. Objectives must keep close pace with social development.
b. The important objectives of education do not change with changing conditions.

40

a. Authorities on subject matter cannot do a good job of specifying content if they are not aware of the nature of the learners.
b. The selection of course content is a technical job, requiring a subject matter expert; a knowledge of the learner affects method of teaching, however.

41

a. Conscientious adult opinion is an important factor in revising objectives and content for a school system.
b. Revisions of any scope must be the products of careful scientific investigation by experts; public relations should be considered in reviewing community opinion, however.

42

a. Though students lack knowledge of subject matter they do know their needs and interests and therefore should have a significant voice in the selection of what should constitute a course.
b. There are certain basic elements that must be taught; there is little point in student selection of content if they are unfamiliar with the elements.

43

a. It is possible to know something without necessarily being able to make use of it.
b. What the student knows and what use he can make of his knowledge are practically the same thing.

44

a. Amount of content may be reduced if it is found that students are not mastering it, but the standards of attainment should remain the same.
b. Standards must vary with the needs and abilities of the learner.

45

a. Much student investigation of problems tends to lead students to doubt the existence of facts; whatever works is true.
b. Students should question "facts" because what can be considered a fact depends upon the use to which it is put.

46

a. Readiness of the student to learn is a very important factor in deciding what should be taught.
b. Learner readiness is important, but it is a factor in the method of teaching rather than in the selection of content.

47

a. Marks should take into account the relationship between students' abilities and their achievements.
b. Marks should be calculated against rather fixed standards; otherwise they have no meaning.

48

a. Individual differences are best handled by providing for student selection of content with the guidance of the teacher.
b. Individual differences are better handled by elective subjects; what is included in the electives should be decided by authorities in the field.

49

a. A follow-up of students should have a large part in revising a school's objectives.
b. The basic skills and knowledges do not change over a period of time; a follow-up does not change objectives.

50

a. Problems should be used as the bases for selecting and organizing content.
b. Problems are too numerous and specific to form the bases for organizing content; content must be reduced to fundamental skills and knowledges.

51

a. The main job of the school is to build a foundation of basic skills and knowledges.
b. The school must concern itself with present problems for they determine what should be taught.

52

a. After the skills of communication in a field have been taught, the remaining content should be conceived as a series of hypotheses to be proposed and tested.
b. Most subject matter is composed of elements of skill and knowledge; once these have been mastered it is a matter of applying them to problem situations.

53

a. There is a satisfaction which comes from knowledge for its own sake; the school should build on this kind of satisfaction.
b. There is little value in knowledge outside of the use that can be made of it.

54

a. The only kind of investigation worthy of the name is factual scientific experimentation.
b. There is much in education that should be investigated in a "practical" sense, i.e., does it work?

55

a. Good moral habits should be "drilled into" students without always analyzing the reasons for them.
b. Good moral habits cannot be acquired effectively without an understanding of the reasons for them; if the reasons change, the habits should be changed.

56

a. Teachers should teach students, not subject matter.
b. The former is largely a glib statement; unless the teacher imparts subject matter he has taught nothing.

57

a. It motivates students to allow them to explore subject areas even if they do not discover the essential elements; however, the teacher should make sure that the essentials are pointed out and learned before the subject is left.
b. The importance of exploration is to develop methods and habits of investigation; the facts uncovered are of lesser importance.

58

a. In order to make objectives more explicit and useful it is necessary to state the kinds of behavior that will characterize the student who achieves them.
b. A more useful method of defining objectives is to list the content that must be covered to attain the objectives.

59

a. A carefully prepared textbook provides an excellent basis for organizing and teaching a course.
b. At best, books are never more than references because each class is different.

60

a. Complexity of subject matter determines what should be taught first; simple, elemental units must precede the more complex.
b. Complexity of subject matter is determined from within the student; what is complex for one student may be simple for another.

61

a. Vocational specialization can best be achieved in a vocational school or on the job; the high school should offer a common core of general subjects.
b. The high school must provide for some degree of specialization.

62

a. Psychological factors within the student are the best determiners of the order of instruction.
b. The content itself determines largely what should be taught first; it is the teacher's job to prepare the learner for what is to be taught.

63

a. Students should be encouraged to critically evaluate content against individual and social needs.
b. There is an inherent value to some content that cannot be determined by its use, at least very directly.

64

a. Objectives should be developed by the persons who are to use them, teachers and pupils.
b. Objectives should be derived by careful study by experts.

65

a. Subject matter should be organized around problems, each requiring a different structure of facts for its solution.
b. Most subject matter is built of progressively more complex elements, each related to the previous.

APPENDIX A2

ANSWER AND ACTIVITIES PROFILE SHEET

Name _____ Date _____ Number _____

1. Class: Fr___ Soph___ Jr___ Sr___ Grad___ Other_____

2. Transfer: Yes___ No___ 3. Commuter: Yes___ No___

4. Veteran___ Non-Veteran___

5. Interest area in Industrial Arts:

a. wood___	d. textiles___	g. drawing___
b. electricity___	e. metals___	h. ceramics___
c. transportation___	f. graphic arts___	i. general industrial arts___

6. Check spaces if you actively participate in the following on-campus clubs:

a. Professional Organizations
- ___ 1. SEANYS
- ___ 2. Industrial Arts Club
- ___ 3. House of Delegates
- ___ 4. Graphic Arts Club
- ___ 5. Other: _____

b. Honorary:
- ___ 1. Kappa Delta Pi
- ___ 2. Epsilon Pi Tau

c. Special Interest
- ___ 1. Bit and Spur
- ___ 2. Catalina Club
- ___ 3. Dance Club
- ___ 4. Ski Club
- ___ 5. Judo Club
- ___ 6. Amateur Radio Club
- ___ 7. Flying Club
- ___ 8. Blackfriars
- ___ 9. Debate
- ___ 10. International Relations Club

d. Intercollegiate Athletics
- ___ 1. Name sports
  - a. _____
  - b. _____
  - c. _____
- ___ 2. Block "O"

e. Music (Name club)
- 1. _____
- 2. _____

f. Art Organizations (Name organization)
- 1. _____
- 2. _____

g. Religious (Name club)
- 1. _____
- 2. _____

h. Service
- ___ 1. Alpha Phi Omega
- ___ 2. Other: _____

i. Social
- ___ 1. Greek fraternity
- ___ 2. Other: _____

j. Publications
- ___ 1. Ontarian
- ___ 2. Oswegonian
- ___ 3. Other: _____

k. Student Government
- ___ 1. CUB
- ___ 2. Interfraternity

l. Intramural Athletics

_____

_____

m. Other Organizations

_____

_____

_____

7. Off-campus Clubs, Organizations, etc. in which I actively participate:

1. _____ 3. _____
2. _____ 4. _____

INVENTORY ON VIEWPOINTS ON EDUCATION

ANSWER SHEET - Form A

1.	a	b	26.	a	b	51.	a	b
2.	a	b	27.	a	b	52.	a	b
3.	a	b	28.	a	b	53.	a	b
4.	a	b	29.	a	b	54.	a	b
5.	a	b	30.	a	b	55.	a	b
6.	a	b	31.	a	b	56.	a	b
7.	a	b	32.	a	b	57.	a	b
8.	a	b	33.	a	b	58.	a	b
9.	a	b	34.	a	b	59.	a	b
10.	a	b	35.	a	b	60.	a	b
11.	a	b	36.	a	b	61.	a	b
12.	a	b	37.	a	b	62.	a	b
13.	a	b	38.	a	b	63.	a	b
14.	a	b	39.	a	b	64.	a	b
15.	a	b	40.	a	b	65.	a	b
16.	a	b	41.	a	b			
17.	a	b	42.	a	b			
18.	a	b	43.	a	b			
19.	a	b	44.	a	b			
20.	a	b	45.	a	b			
21.	a	b	46.	a	b			
22.	a	b	47.	a	b			
23.	a	b	48.	a	b			
24.	a	b	49.	a	b			
25.	a	b	50.	a	b			

APPENDIX A3

VIEWPOINT INVENTORY

DIRECTIONS: The purpose of this study is to measure the meanings of specific ideas by judging them against a series of descriptive scales. In taking this inventory, please make your judgments on the basis of what these things mean to you. On each page of this booklet you will find two concepts to be judged and beneath each a set of scales. You are to rate the concept on all scales.

EXAMPLE:

In my opinion:
the automobile MUSTANG is:
(as opposed to: GMC truck)

graceful___ : : : : : : ___ugly

strong___ : : : : : : ___weak

fast___ : : : : : : ___slow

If you feel that the concept is very closely related to one end of the scale, place your mark as follows:

graceful X : : : : : : ugly

OR

graceful : : : : : : X ugly

If you feel that the concept is quite closely related to one end or another of the scale (but not extremely), you should place your mark as follows:

graceful : X : : : : : ugly

OR

graceful : : : : : X : ugly

If the concept seems only slightly related to one side as opposed to the other side (but not really neutral), place your mark as follows:

graceful : : X : : : : ugly

OR

graceful : : : : X : : ugly

The direction toward which you check, of course, depends upon which of the two ends of the scale seem most characteristic of the thing you're judging.

If you consider the concept to be neutral on the scale, both sides of the scale equally associated with the concept, or if the scale is completely irrelevant, unrelated to the concept, then you should place your mark in the middle space.

graceful : : : X : : : ugly

IMPORTANT:

(1) Place your check-marks in the middle of spaces, not on the boundaries:

this not this

graceful : X : : : X : ugly

(2) Be sure you check every scale for every concept - do not omit any.
(3) Never put more than one check-mark on a single scale.
(4) Make each item a separate and independent judgment.
(5) There are no right or wrong answers.

In my opinion:
Educational aims
that are:

FIXED AND ETERNAL
(As opposed to: Relative and Changing)

GOOD	:	:	:	:	:	:	BAD
ENERGETIC	:	:	:	:	:	:	INERT
AIMLESS	:	:	:	:	:	:	MOTIVATED
VIGOROUS	:	:	:	:	:	:	FEEBLE
EDUCATED	:	:	:	:	:	:	IGNORANT
DISREPUTABLE	:	:	:	:	:	:	REPUTABLE
UNWISE	:	:	:	:	:	:	WISE
PROHIBITIVE	:	:	:	:	:	:	PERMISSIVE
ACTIVE	:	:	:	:	:	:	PASSIVE
POTENT	:	:	:	:	:	:	IMPOTENT

In my opinion
The teacher's
primary duty is:

GUIDING STUDENTS
(As opposed to: Explanation of Subject)

SIMPLE	:	:	:	:	:	:	COMPLEX
PROHIBITIVE	:	:	:	:	:	:	PERMISSIVE
GOOD	:	:	:	:	:	:	BAD
IGNORANT	:	:	:	:	:	:	EDUCATED
PASSIVE	:	:	:	:	:	:	ACTIVE
RIGHT	:	:	:	:	:	:	WRONG
VIGOROUS	:	:	:	:	:	:	FEEBLE
IMPOTENT	:	:	:	:	:	:	POTENT
UNINTENTIONAL	:	:	:	:	:	:	INTENTIONAL
REPUTABLE	:	:	:	:	:	:	DISREPUTABLE

In my opinion
Course Material
Organized by:

EXPERT PROFESSOR
(As opposed to: Pupil and Instructor)

COMPLEX	:	:	:	:	:	:	SIMPLE
WEAK	:	:	:	:	:	:	STRONG
SUPERIOR	:	:	:	:	:	:	INFERIOR
UNSUCCESSFUL	:	:	:	:	:	:	SUCCESSFUL
WISE	:	:	:	:	:	:	FOOLISH
IMPOTENT	:	:	:	:	:	:	POTENT
MOTIVATED	:	:	:	:	:	:	AIMLESS
GOOD	:	:	:	:	:	:	BAD
FREE	:	:	:	:	:	:	CONSTRAINED
ACTIVE	:	:	:	:	:	:	PASSIVE

In my opinion
Tests that are:

PRACTICAL AND SUBJECTIVE
(As opposed to: Standardized and Objective)

STRONG	:	:	:	:	:	:	WEAK
TRUE	:	:	:	:	:	:	FALSE
EASY	:	:	:	:	:	:	DIFFICULT
AIMLESS	:	:	:	:	:	:	MOTIVATED
INFERIOR	:	:	:	:	:	:	SUPERIOR
GOOD	:	:	:	:	:	:	BAD
FREE	:	:	:	:	:	:	CONSTRAINED
ACTIVE	:	:	:	:	:	:	PASSIVE
POTENT	:	:	:	:	:	:	IMPOTENT
EDUCATED	:	:	:	:	:	:	IGNORANT

In my opinion Knowledge is:

ABSOLUTE AND ETERNAL
(As opposed to: Evolving and Emerging)

GOOD	:	:	:	:	:	:	BAD
FEEBLE	:	:	:	:	:	:	VIGOROUS
PASSIVE	:	:	:	:	:	:	ACTIVE
MOTIVATED	:	:	:	:	:	:	AIMLESS
INFERIOR	:	:	:	:	:	:	SUPERIOR
WISE	:	:	:	:	:	:	FOOLISH
STRONG	:	:	:	:	:	:	WEAK
SIMPLE	:	:	:	:	:	:	COMPLEX
FREE	:	:	:	:	:	:	CONSTRAINED
BENEFICIAL	:	:	:	:	:	:	HARMFUL

In my opinion Learning is a Process of:

IDENTIFYING PROBLEMS
(As opposed to: Exercise, Drill, & Discipline)

MOVING	:	:	:	:	:	:	STILL
AIMLESS	:	:	:	:	:	:	MOTIVATED
UNWISE	:	:	:	:	:	:	WISE
GOOD	:	:	:	:	:	:	BAD
POTENT	:	:	:	:	:	:	IMPOTENT
WEAK	:	:	:	:	:	:	STRONG
HARMFUL	:	:	:	:	:	:	BENEFICIAL
ACTIVE	:	:	:	:	:	:	PASSIVE
SUPERIOR	:	:	:	:	:	:	INFERIOR
FEEBLE	:	:	:	:	:	:	VIGOROUS

APPENDIX A4
VIEWPOINT INVENTORY

DIRECTIONS: The purpose of this study is to measure the meanings of specific ideas by judging them against a series of descriptive scales. In taking this inventory, please make your judgments on the basis of what these things mean to you. On each page of this booklet you will find two concepts to be judged and beneath each a set of scales. You are to rate the concept on all scales.

EXAMPLE:

In my opinion:
the automobile MUSTANG is:
(as opposed to: GMC truck)

graceful : : : : : : ugly

strong : : : : : : weak

fast : : : : : : slow

If you feel that the concept is very closely related to one end of the scale, place your mark as follows:

graceful X : : : : : : ugly

OR

graceful : : : : : : X ugly

If you feel that the concept is quite closely related to one end or another of the scale (but not extremely), you should place your mark as follows:

graceful : X : : : : : ugly

OR

graceful : : : : : X : ugly

If the concept seems only slightly related to one side as opposed to the other side (but not really neutral), place your mark as follows:

graceful : : X : : : : ugly

OR

graceful : : : : X : : ugly

The direction toward which you check, of course, depends upon which of the two ends of the scale seem most characteristic of the thing you're judging.

If you consider the concept to be neutral on the scale, both sides of the scale equally associated with the concept, or if the scale is completely irrelevant, unrelated to the concept, then you should place your mark in the middle space.

graceful : : : X : : : ugly

IMPORTANT:

(1) Place your check-marks in the middle of spaces, not on the boundaries:

this not this

graceful : X : : : X : ugly

(2) Be sure you check every scale for every concept - do not omit any.
(3) Never put more than one check-mark on a single scale.
(4) Make each item a separate and independent judgment.
(5) There are no right or wrong answers.

In my opinion
Course Material
Organized by:

PUPIL AND INSTRUCTOR
(As opposed to: Expert Professor)

COMPLEX	:	:	:	:	:	:	SIMPLE
WEAK	:	:	:	:	:	:	STRONG
SUPERIOR	:	:	:	:	:	:	INFERIOR
UNSUCCESSFUL	:	:	:	:	:	:	SUCCESSFUL
WISE	:	:	:	:	:	:	FOOLISH
IMPOTENT	:	:	:	:	:	:	POTENT
MOTIVATED	:	:	:	:	:	:	AIMLESS
GOOD	:	:	:	:	:	:	BAD
FREE	:	:	:	:	:	:	CONSTRAINED
ACTIVE	:	:	:	:	:	:	PASSIVE

In my opinion
Tests that are:

STANDARDIZED AND OBJECTIVE
(As opposed to: Practical and Subjective)

STRONG	:	:	:	:	:	:	WEAK
TRUE	:	:	:	:	:	:	FALSE
EASY	:	:	:	:	:	:	DIFFICULT
AIMLESS	:	:	:	:	:	:	MOTIVATED
INFERIOR	:	:	:	:	:	:	SUPERIOR
GOOD	:	:	:	:	:	:	BAD
FREE	:	:	:	:	:	:	CONSTRAINED
ACTIVE	:	:	:	:	:	:	PASSIVE
POTENT	:	:	:	:	:	:	IMPOTENT
EDUCATED	:	:	:	:	:	:	IGNORANT

In my opinion:
Educational aims that are:

RELATIVE AND CHANGING
(As opposed to: Fixed and Eternal)

GOOD	:	:	:	:	:	:	BAD
ENERGETIC	:	:	:	:	:	:	INERT
AIMLESS	:	:	:	:	:	:	MOTIVATED
VIGOROUS	:	:	:	:	:	:	FEEBLE
EDUCATED	:	:	:	:	:	:	IGNORANT
DISREPUTABLE	:	:	:	:	:	:	REPUTABLE
UNWISE	:	:	:	:	:	:	WISE
PROHIBITIVE	:	:	:	:	:	:	PERMISSIVE
ACTIVE	:	:	:	:	:	:	PASSIVE
POTENT	:	:	:	:	:	:	IMPOTENT

In my opinion
The teacher's primary duty is:

EXPLANATION OF SUBJECT
(As opposed to: Guiding Students)

SIMPLE	:	:	:	:	:	:	COMPLEX
PROHIBITIVE	:	:	:	:	:	:	PERMISSIVE
GOOD	:	:	:	:	:	:	BAD
IGNORANT	:	:	:	:	:	:	EDUCATED
PASSIVE	:	:	:	:	:	:	ACTIVE
RIGHT	:	:	:	:	:	:	WRONG
VIGOROUS	:	:	:	:	:	:	FEEBLE
IMPOTENT	:	:	:	:	:	:	POTENT
UNINTENTIONAL	:	:	:	:	:	:	INTENTIONAL
REPUTABLE	:	:	:	:	:	:	DISREPUTABLE

In my opinion
Knowledge is:

EVOLVING AND EMERGING
(As opposed to: Absolute and Eternal

GOOD	:	:	:	:	:	:	BAD
FEEBLE	:	:	:	:	:	:	VIGOROUS
PASSIVE	:	:	:	:	:	:	ACTIVE
MOTIVATED	:	:	:	:	:	:	AIMLESS
INFERIOR	:	:	:	:	:	:	SUPERIOR
WISE	:	:	:	:	:	:	FOOLISH
STRONG	:	:	:	:	:	:	WEAK
SIMPLE	:	:	:	:	:	:	COMPLEX
FREE	:	:	:	:	:	:	CONSTRAINED
BENEFICIAL	:	:	:	:	:	:	HARMFUL

In my opinion
Learning is a
Process of:

EXERCISE, DRILL, & DISCIPLINE
(As opposed to: Identifying Problems)

MOVING	:	:	:	:	:	:	STILL
AIMLESS	:	:	:	:	:	:	MOTIVATED
UNWISE	:	:	:	:	:	:	WISE
GOOD	:	:	:	:	:	:	BAD
POTENT	:	:	:	:	:	:	IMPOTENT
WEAK	:	:	:	:	:	:	STRONG
HARMFUL	:	:	:	:	:	:	BENEFICIAL
ACTIVE	:	:	:	:	:	:	PASSIVE
SUPERIOR	:	:	:	:	:	:	INFERIOR
FEEBLE	:	:	:	:	:	:	VIGOROUS

APPENDIX A5

CONVERSION TABLE: EDUCATIONAL VIEWPOINTS INVENTORY

Evaluative Items		Potency and Activity Items	
Raw Score:	Converted Score:	Raw Score:	Converted Score:
28	4	21	3
27	5	20	4
26	6	19	5
25	7	18	6
24	8	17	7
23	9	16	8
22	10	15	9
21	11	14	10
20	12	13	11
19	13	12	12
18	14	11	13
17	15	10	14
16	16	9	15
15	17	8	16
14	18	7	17
13	19	6	18
12	20	5	19
11	21	4	20
10	22	3	21
9	22		
8	24		
7	25		
6	26		
5	27		
4	28		

APPENDIX B

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Table B1. Item number one: Knowledge. Probability figures for nine comparisons*

Deviations	OA	OB	OC	AB	AC	BC	O-ABC	ABC	Total	Theo.
0.0	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
0.5	.763	.824	.772	.701	.824	.695	.804	.739	.772	.841
1.0	.382	.701	.579	.473	.614	.371	.621	.485	.552	.617
1.5	.236	.351	.351	.210	.280	.134	.331	.208	.269	.230
2.0	.200	.175	.175	.140	.158	.084	.200	.127	.164	.071
2.5	.114	.105	.105	.140	.140	.084	.124	.121	.123	.027
3.0	.059	.070	.053	.088	.035	.033	.076	.058	.068	.002
N =	55	57	57	57	57	59	169	173	352	Infin.

*O: Initial treatment.
A: Same form as O, nine weeks later.
B: Same form as O, ten weeks later.
C: Alternate form, ten weeks later.
ABC: Average probability of comparisons of AB, AC, BC.
O-ABC: Average probability of comparisons of OA, OB, OC.
Total: Average probability of comparisons of AB, AC, BC, OA, OB, OC.

Table B2. Item number two: Learning. Probability figures for nine comparisons*

Deviations	OA	OB	OC	AB	AC	BC	O-ABC	ABC	Total	Theo.
0.0	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
0.5	.818	.772	.912	.649	.877	.847	.834	.792	.812	.841
1.0	.400	.456	.579	.228	.596	.474	.479	.433	.456	.617
1.5	.254	.210	.456	.105	.438	.288	.307	.277	.292	.230
2.0	.091	.070	.263	.053	.333	.203	.141	.179	.161	.071
2.5	.073	.053	.210	.035	.246	.153	.112	.139	.126	.027
3.0	.055	.053	.140	.0181	.158	.136	.082	.093	.088	.002
N =	55	57	57	57	57	59	169	173	342	Infin.

*O: Initial treatment.
A: Same form as O, nine weeks later.
B: Same form as O, ten weeks later.
C: Alternate form, ten weeks later.
ABC: Average probability of comparisons of AB, AC, BC.
O-ABC: Average probability of comparisons of OA, OB, OC.
Total: Average probability of comparisons of AB, AC, BC, OA, OB, OC.

Table B3. Item number three: Course Material. Probability figures for nine comparisons*

Deviations	OA	OB	OC	AB	AC	BC	O-ABC	ABC	Total	Theo.
0.0	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
0.5	.727	.807	.929	.684	.912	.796	.822	.797	.810	.841
1.0	.382	.544	.754	.456	.649	.390	.562	.497	.529	.423
1.5	.236	.456	.579	.228	.456	.237	.426	.306	.365	.230
2.0	.182	.281	.386	.158	.245	.170	.284	.190	.237	.071
2.5	.073	.211	.280	.123	.210	.119	.189	.150	.170	.027
3.0	.037	.123	.193	.053	.123	.051	.118	.075	.097	.002
N =	55	57	57	57	57	59	169	173	342	Infin.

*O: Initial treatment.
A: Same form as O, nine weeks later.
B: Same form as O, ten weeks later.
C: Alternate form, ten weeks later.
ABC: Average probability of comparisons of AB, AC, BC.
O-ABC: Average probability of comparisons of OA, OB, OC.
Total: Average probability of comparisons of AB, AC, BC, OA, OB, OC.

Table B4. Item number four: Tests. Probability figures for nine comparisons*

Deviations	OA	OB	OC	AB	AC	BC	O-ABC	ABC	Total	Theo.
0.0	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
0.5	.818	.772	.929	.754	.754	.728	.840	.745	.792	.841
1.0	.400	.386	.579	.245	.473	.339	.455	.352	.403	.617
1.5	.254	.263	.368	.140	.245	.220	.296	.202	.248	.230
2.0	.127	.175	.245	.070	.193	.136	.183	.133	.158	.718
2.5	.091	.123	.193	.052	.158	.119	.136	.110	.123	.027
3.0	.055	.123	.123	.052	.105	.085	.101	.081	.091	.002
N =	55	57	57	57	57	59	169	173	342	Infin.

*O: Initial treatment.
A: Same form as O, nine weeks later.
B: Same form as O, ten weeks later.
C: Alternate form, ten weeks later.
ABC: Average probability of comparisons of AB, AC, BC.
O-ABC: Average probability of comparisons of OA, OB, OC.
Total: Average probability of comparisons of AB, AC, BC, OA, OB, OC.

Table B5. Item number five: Educational Aims. Probability figures for nine comparisons*

Deviations	OA	OB	OC	AB	AC	BC	O-ABC	ABC	Total	Theo.
0.0	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
0.5	.691	.763	.772	.666	.824	.779	.733	.757	.745	.841
1.0	.363	.456	.491	.421	.438	.254	.438	.370	.403	.617
1.5	.218	.263	.333	.245	.316	.135	.272	.231	.251	.230
2.0	.145	.155	.210	.175	.210	.084	.172	.156	.164	.071
2.5	.109	.088	.150	.123	.123	.034	.118	.092	.105	.027
3.0	.073	.073	.105	.105	.088	.034	.083	.075	.079	.002
N =	55	57	57	57	57	59	169	173	342	Infin.

*O: Initial treatment.
A: Same form as O, nine weeks later.
B: Same form as O, ten weeks later.
C: Alternate form, ten weeks later.
ABC: Average probability of comparisons of AB, AC, BC.
O-ABC: Average probability of comparisons of OA, OB, OC.
Total: Average probability of comparisons of AB, AC, BC, OA, OB, OC.

Table B6. Item number six: Teacher's Duty. Probability figures for nine comparisons*

Deviations	OA	OB	OC	AB	AC	BC	O-ABC	ABC	Total	Theo.
0.0	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
0.5	.836	.736	.842	.684	.824	.728	.804	.745	.774	.841
1.0	.509	.521	.456	.280	.438	.371	.497	.358	.427	.423
1.5	.382	.351	.316	.158	.263	.185	.348	.196	.272	.230
2.0	.218	.228	.210	.088	.088	.228	.151	.218	.150	.071
2.5	.164	.175	.183	.035	.175	.101	.177	.098	.137	.027
3.0	.164	.158	.140	.035	.140	.084	.153	.081	.117	.002
N =	55	57	57	57	57	59	169	173	342	Infin.

*O: Initial treatment.
A: Same form as O, nine weeks later.
B: Same form as O, ten weeks later.
C: Alternate form, ten weeks later.
ABC: Average probability of comparisons of AB, AC, BC.
O-ABC: Average probability of comparisons of OA, OB, OC.
Total: Average probability of comparisons of AB, AC, BC, OA, OB, OC.

Table B7. Evaluative scales for six items: Probability figures for nine comparisons*

Deviations	OA	OB	OC	AB	AC	BC	O-ABC	ABC	Total	Theo.
0.0	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
0.5	.618	.421	.315	.631	.508	.339	.449	.491	.470	.841
1.0	.363	.193	.105	.333	.228	.135	.219	.231	.225	.423
1.5	.127	.105	.035	.158	.087	.050	.089	.098	.093	.230
2.0	.000	.035	.000	.070	.035	.000	.012	.034	.023	.071
2.5	.000	.000	.000	.017	.000	.000	.000	.006	.003	.027
3.0	.000	.000	.000	.000	.000	.000	.000	.000	.000	.002
N =	55	57	57	57	57	59	169	173	342	Infin.

*O: Initial treatment.
A: Same form as O, nine weeks later.
B: Same form as O, ten weeks later.
C: Alternate form, ten weeks later.
ABC: Average probability of comparisons of AB, AC, BC.
O-ABC: Average probability of comparisons of OA, OB, OC.
Total: Average probability of comparisons of AB, AC, BC, OA, OB, OC.

Table B8. Potency scales for six items: Probability figures for nine comparisons*

Deviations	OA	OB	OC	AB	AC	BC	O-ABC	ABC	Total	Theo.
0.0	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
0.5	.527	.368	.298	.631	.701	.220	.396	.514	.456	.841
1.0	.254	.128	.087	.350	.245	.051	.153	.214	.184	.423
1.5	.091	.070	.000	.087	.087	.034	.053	.069	.061	.230
2.0	.036	.017	.000	.017	.035	.017	.017	.023	.020	.071
2.5	.000	.000	.000	.017	.017	.000	.000	.011	.006	.027
3.0	.000	.000	.000	.000	.000	.000	.000	.000	.000	.002
N =	55	57	57	57	57	59	169	173	342	Infin.

*O: Initial treatment.
A: Same form as O, nine weeks later.
B: Same form as O, ten weeks later.
C: Alternate form, ten weeks later.
ABC: Average probability of comparisons of AB, AC, BC.
O-ABC: Average probability of comparisons of OA, OB, OC.
Total: Average probability of comparisons of AB, AC, BC, OA, OB, OC.

Table B9. Activity scales for six items: Probability figures for nine comparisons*

Deviations	OA	OB	OC	AB	AC	BC	O-ABC	ABC	Total	Theo.
0.0	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
0.5	.600	.403	.456	.614	.614	.288	.485	.5029	.494	.841
1.0	.345	.228	.193	.403	.421	.067	.254	.294	.275	.423
1.5	.091	.123	.052	.193	.140	.051	.089	.127	.108	.230
2.0	.000	.035	.035	.123	.035	.000	.024	.052	.038	.071
2.5	.000	.000	.000	.035	.000	.000	.000	.011	.006	.027
3.0	.000	.000	.000	.000	.000	.000	.000	.000	.000	.002
N =	55	57	57	57	57	59	169	173	342	Infin.

*O: Initial treatment.
A: Same form as O, nine weeks later.
B: Same form as O, ten weeks later.
C: Alternate form, ten weeks later.
ABC: Average probability of comparisons of AB, AC, BC.
O-ABC: Average probability of comparisons of OA, OB, OC.
Total: Average probability of comparisons of AB, AC, BC, OA, OB, OC.

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Table C1. Median Test between nonmembers and members of one club or activity in response to Swanson's Inventory

	Non-members	Members of One Club	Totals
Less Progressive	23	36	59
More Progressive	27	32	59
Totals	50	68	118

df = 1

X^2 = .326

Table C2. Median Test between nonmembers and members of two clubs or activities in response to Swanson's Inventory

	Non-members	Members of Two Clubs	Totals
Less Progressive	26	33	59
More Progressive	24	35	59
Totals	50	68	118

df = 1

X^2 = .034

Table C3. Median Test between nonmembers and members of three clubs or activities in response to Swanson's Inventory

	Non-members	Members of Three Clubs	Totals
Less Progressive	24	27	51
More Progressive	26	24	50
Totals	50	51	101

df = 1

X^2 = .088

Table C4. Median Test between nonmembers and members of four clubs or activities in response to Swanson's Inventory

	Non-members	Members of Four Clubs	Totals
Less Progressive	25	26	51
More Progressive	25	26	51
Totals	50	52	102

df = 1

X^2 = .000

Table C5. Median Test between nonmembers and members of five or more clubs and/or activities in response to Swanson's Inventory

	Non-members	Members of Five or More Clubs	Totals
Less Progressive	22	31	53
More Progressive	28	26	54
Totals	50	57	107

df = 1

X^2 = .771

Table C6. Median Test between single-choice members of professional organizations and nonmembers in response to Swanson's Inventory

	Single-Choice Members	Non-members	Totals
Less Progressive	99	46	145
More Progressive	86	53	139
Totals	185	99	284

df = 1

X^2 = 1.015

Table C7. Median Test between members of two professional organizations and nonmembers in response to Swanson's Inventory

	Two-Choice Members	Non-members	Totals
Less Progressive	15	99	114
More Progressive	26	86	112
Totals	41	185	226

df = 1

X^2 = 3.171

Table C8. Median Test between members of three or more professional organizations and nonmembers in response to Swanson's Inventory

	Three or More Choices: Members	Non-members	Totals
Less Progressive	12	91	103
More Progressive	9	94	103
Totals	21	185	206

df = 1

X^2 = .214

Table C9. Median Test between single choice members and members of two professional organizations in response to Swanson's Inventory

	Members of One Club	Members of Two Clubs	Totals
Less Progressive	54	16	70
More Progressive	45	25	70
Totals	99	41	140

df = 1

$X^2 = 2.207$

Table C10. Median Test between single choice members and members of three or more professional organizations in response to Swanson's Inventory

	Members of One Club	Three or More Choices: Members	Totals
Less Progressive	46	13	59
More Progressive	53	8	61
Totals	99	21	120

df = 1

$X^2 = 1.092$

Table C11. Median Test between members of two professional organizations and members of three or more professional organizations in response to Swanson's Inventory

	Members of Two Clubs	Three or More Choices: Members	Totals
Less Progressive	18	13	31
More Progressive	23	8	31
Totals	41	21	62

df = 1

X^2 = 1.152

Table C12. Median Test between nonmembers and members of a single activity in intramural athletics in response to Swanson's Inventory

	Non-members	Members of Single Activity	Totals
Less Progressive	99	36	135
More Progressive	101	34	135
Totals	200	70	270

df = 1

X^2 = .019

Table C13. Median Test between nonmembers and members of two activities in intramural athletics in response to Swanson's Inventory

	Non-members	Members of Two Activities	Totals
Less Progressive	99	26	125
More Progressive	101	24	125
Totals	200	50	250

df = 1

X^2 = .025

Table C14. Median Test between nonmembers and members of three or more activities in intramural athletics in response to Swanson's Inventory

	Non-members	Members of Three or More Activities	Totals
Less Progressive	102	11	113
More Progressive	98	15	113
Totals	200	26	226

df = 1

X^2 = .391

Table C15. Median Test between students with single membership and students with two memberships in intramural athletics in response to Swanson's Inventory

	Membership in:		
	One Activity	Two Activities	Totals
Less Progressive	34	26	60
More Progressive	36	24	60
Totals	70	50	120

df = 1

X^2 = .034

Table C16. Median Test between students with single membership and students with three or more memberships in intramural athletics in response to Swanson's Inventory

	Members of:		
	One Activity	Three or More Activities	Totals
Less Progressive	37	11	48
More Progressive	33	15	48
Totals	70	26	96

df = 1

X^2 = .474

Table C17. Median Test between students with two memberships and students with three or more memberships in intramural athletics in response to Swanson's Inventory

	Members of: Two Activities	Three or More Activities	Totals
Less Progressive	27	11	38
More Progressive	23	15	38
Totals	50	26	76

df = 1

X^2 = .526

Table C18. Median Test between senior transfer and senior nontransfer students in response to Swanson's Inventory

	Senior Transfer	Nontransfer	Totals
Less Progressive	44	22	66
More Progressive	37	30	67
Totals	81	52	133

df = 1

X^2 = 1.379

Table C19. Median Test between senior nontransfer and Other nontransfer students in response to Swanson's Inventory

	Senior Nontransfer	Other Nontransfer	Totals
Less Progressive	17	77	94
More Progressive	35	59	94
Totals	52	136	188

df = 1

$X^2 = 7.682$

Table C20. Median Test between senior nontransfer and Other transfer students in response to Swanson's Inventory

	Senior Nontransfer	Other Transfer	Totals
Less Progressive	19	47	65
More Progressive	33	30	64
Totals	52	77	129

df = 1

$X^2 = 6.505$

Table C21. Median Test between senior transfer and Other nontransfer students in response to Swanson's Inventory

	Senior Transfer	Other Nontransfer	Totals
Less Progressive	31	78	109
More Progressive	50	58	108
Totals	81	136	217

df = 1

$X^2 = 6.649$

Table C22. Median Test between senior transfer and Other transfer students in response to Swanson's Inventory

	Senior Transfer	Other Transfer	Totals
Less Progressive	32	47	79
More Progressive	49	30	79
Totals	81	77	158

df = 1

$X^2 = 6.485$

Table C23. Median Test between Other nontransfer and Other transfer students in response to Swanson's Inventory

	Other Nontransfer	Other Transfer	Totals
Less Progressive	39	68	107
More Progressive	38	68	106
Totals	77	136	213

df = 1

X^2 = 0.008 Note: Not corrected for continuity.

Table C24. Median Test between senior veterans and senior nonveterans in response to Swanson's Inventory

	Senior		
	Veterans	Nonveterans	Totals
Less Progressive	8	58	66
More Progressive	13	54	67
Totals	21	112	133

df = 1

X^2 = .834

Table C25. Median Test between senior veterans and Other veterans in response to Swanson's Inventory

	Senior Veterans	Other Veterans	Totals
Less Progressive	6	17	23
More Progressive	15	8	23
Totals	21	25	46

df = 1

$X^2 = 5.607$

Table C26. Median Test between senior veterans and Other nonveterans in response to Swanson's Inventory

	Senior Veterans	Other Nonveterans	Totals
Less Progressive	6	98	104
More Progressive	15	90	105
Totals	21	188	209

df = 1

$X^2 = 3.303$

Table C27. Median Test between senior nonveterans and Other veterans in response to Swanson's Inventory

	Senior Nonveterans	Other Veterans	Totals
Less Progressive	47	21	68
More Progressive	65	4	69
Totals	112	25	137

df = 1

X^2 = 12.813

Table C28. Median Test between senior nonveterans and Other nonveterans in response to Swanson's Inventory

	Senior Nonveterans	Other Nonveterans	Totals
Less Progressive	42	108	150
More Progressive	70	80	150
Totals	112	188	300

df = 1

X^2 = 10.386

Table C29. Median Test between Other veterans and Other nonveterans in response to Swanson's Inventory

	Other Veterans	Other Nonveterans	Totals
Less Progressive	13	93	106
More Progressive	12	95	107
Totals	25	188	213

df = 1

X^2 = .0006

Table C30. Median Test between senior generalists and senior specialists in response to Swanson's Inventory

	Senior Generalists	Senior Specialists	Totals
Less Progressive	18	48	66
More Progressive	27	40	67
Totals	45	88	133

df = 1

X^2 = 1.971

Table C31. Median Test between senior generalists and Other generalists in response to Swanson's Inventory

	Senior Generalists	Other Generalists	Totals
Less Progressive	14	30	44
More Progressive	31	12	43
Totals	45	42	87

df = 1

X^2 = 11.101

Table C32. Median Test between senior generalists and Other specialists in response to Swanson's Inventory

	Senior Generalists	Other Specialists	Totals
Less Progressive	14	94	108
More Progressive	31	77	108
Totals	45	171	216

df = 1

X^2 = 6.315

Table C33. Median Test between senior specialists and Other generalists in response to Swanson's Inventory

	Senior Specialists	Other Generalists	Totals
Less Progressive	37	28	65
More Progressive	51	14	65
Totals	88	42	130

df = 1

$X^2 = 5.944$

Table C34. Median Test between senior specialists and Other specialists in response to Swanson's Inventory

	Senior Specialists	Other Specialists	Totals
Less Progressive	34	95	129
More Progressive	54	76	130
Totals	88	171	259

df = 1

$X^2 = 5.993$

Table C35. Median Test between Other generalists and Other specialists in response to Swanson's Inventory

	Other Generalists	Other Specialists	Totals
Less Progressive	23	84	107
More Progressive	19	87	106
Totals	42	171	213

df = 1

$x^2 = 0.232$

Table C36. Median Test between extreme senior generalists and extreme senior specialists in response to Swanson's Inventory

	Extreme		
	Senior Generalists	Senior Specialists	Totals
Less Progressive	15	21	36
More Progressive	20	16	36
Totals	35	37	72

df = 1

$x^2 = 0.889$

Table C37. Median Test between extreme senior generalists and extreme Other generalists in response to Swanson's Inventory

	Extreme		
	Senior Generalists	Other Generalists	Totals
Less Progressive	12	19	31
More Progressive	23	8	31
Totals	35	27	62

df = 1

X^2 = 6.560

Table C38. Median Test between extreme senior generalists and extreme Other specialists in response to Swanson's Inventory

	Extreme		
	Senior Generalists	Other Specialists	Totals
Less Progressive	10	51	61
More Progressive	25	36	61
Totals	35	87	122

df = 1

X^2 = 7.852

Table C39. Median Test between extreme senior specialists and extreme Other generalists in response to Swanson's Inventory

	Extreme		
	Senior Specialists	Other Generalists	Totals
Less Progressive	14	18	32
More Progressive	23	9	32
Totals	37	27	64

df = 1

$X^2 = 4.100$

Table C40. Median Test between extreme senior specialists and extreme Other specialists in response to Swanson's Inventory

	Extreme		
	Senior Specialists	Other Specialists	Totals
Less Progressive	15	47	62
More Progressive	22	40	62
Totals	37	87	124

df = 1

$X^2 = 1.386$

Table C41. Median Test between extreme Other generalists and extreme Other specialists in response to Swanson's Inventory

	Extreme		
	Other Generalists	Other Specialists	Totals
Less Progressive	16	41	57
More Progressive	11	46	57
Totals	27	87	114

df = 1

$x^2 = 0.776$

Table C42. Median Test between senior members and senior nonmembers of professional educational organizations in response to Swanson's Inventory

	Senior Members	Senior Nonmembers	Totals
Less Progressive	36	30	66
More Progressive	39	28	67
Totals	75	58	133

df = 1

$x^2 = 0.630$

Table C43. Median Test between senior members and Other members of professional educational organizations in response to Swanson's Inventory

	Senior Members	Other Members	Totals
Less Progressive	31	48	79
More Progressive	44	36	80
Totals	75	84	159

df = 1

$X^2 = 3.354$

Table C44. Median Test between senior members and Other nonmembers of professional educational organizations in response to Swanson's Inventory

	Senior Members	Other Nonmembers	Totals
Less Progressive	27	75	102
More Progressive	48	54	102
Totals	75	129	204

df = 1

$X^2 = 8.434$

Table C45. Median Test between senior nonmembers and Other members of professional educational organizations in response to Swanson's Inventory

	Senior Nonmembers	Other Members	Totals
Less Progressive	23	48	71
More Progressive	35	36	71
Totals	58	84	142

df = 1

$X^2 = 3.526$

Table C46. Median Test between senior nonmembers and Other nonmembers of professional educational organizations in response to Swanson's Inventory

	Senior Nonmembers	Other Nonmembers	Totals
Less Progressive	19	74	93
More Progressive	39	55	94
Totals	58	129	187

df = 1

$X^2 = 8.730$

Table C47. Median Test between Other members and Other non-members of professional educational organizations in response to Swanson's Inventory

	Other Members	Other Nonmembers	Totals
Less Progressive	40	66	106
More Progressive	44	63	107
Totals	84	129	213

df = 1

$x^2 = 0.133$

Table C48. Median Test between senior nonmembers and senior members of special interest organizations in response to Swanson's Inventory

	Senior Nonmembers	Senior Members	Totals
Less Progressive	47	19	66
More Progressive	48	19	67
Totals	95	38	133

df = 1

$x^2 = 0.000$

Table C49. Median Test between senior nonmembers and Other nonmembers of special interest organizations in response to Swanson's Inventory

	Senior Nonmembers	Other Nonmembers	Totals
Less Progressive	34	90	124
More Progressive	61	63	124
Totals	95	153	248

df = 1

X^2 = 11.534

Table C50. Median Test between senior nonmembers and Other members of special interest organizations in response to Swanson's Inventory

	Senior Nonmembers	Other Members	Totals
Less Progressive	41	36	77
More Progressive	54	24	78
Totals	95	60	155

df = 1

X^2 = 3.526

Table C51. Median Test between senior members and Other nonmembers of special interest organizations in response to Swanson's Inventory

	Senior Members	Other Nonmembers	Totals
Less Progressive	15	85	100
More Progressive	23	68	101
Totals	38	153	201

df = 1

$X^2 = 0.974$

Table C52. Median Test between senior members and Other members of special interest organizations in response to Swanson's Inventory

	Senior Members	Other Members	Totals
Less Progressive	15	34	49
More Progressive	23	26	49
Totals	38	60	98

df = 1

$X^2 = 2.106$

Table C53. Median Test between Other members and Other nonmembers of special interest organizations in response to Swanson's Inventory

	Other Members	Other Nonmembers	Totals
Less Progressive	31	75	106
More Progressive	29	78	107
Totals	60	153	213

df = 1

$x^2 = 0.037$

Table C54. Median Test between senior nonmembers and senior members of intercollegiate athletics in response to Swanson's Inventory

	Senior Nonmembers	Senior Members	Totals
Less Progressive	50	16	66
More Progressive	54	13	67
Totals	104	29	133

df = 1

$x^2 = 0.216$

Table C55. Median Test between senior nonmembers and Other nonmembers of intercollegiate athletics in response to Swanson's Inventory

	Senior Nonmembers	Other Nonmembers	Totals
Less Progressive	37	100	137
More Progressive	67	71	138
Totals	104	171	275

df = 1

X^2 = 13.568

Table C56. Median Test between senior nonmembers and Other members of intercollegiate athletics in response to Swanson's Inventory

	Senior Nonmembers	Other Members	Totals
Less Progressive	46	27	73
More Progressive	58	15	73
Totals	104	42	146

df = 1

X^2 = 4.044

Table C57. Median Test between senior members and Other nonmembers of intercollegiate athletics in response to Swanson's Inventory

	Senior Members	Other Nonmembers	Totals
Less Progressive	14	86	100
More Progressive	15	85	100
Totals	29	171	200

df = 1

$X^2 = 0.000$

Table C58. Median Test between senior members and Other members of intercollegiate athletics in response to Swanson's Inventory

	Senior Members	Other Members	Totals
Less Progressive	12	23	35
More Progressive	17	19	36
Totals	29	42	71

df = 1

$X^2 = 0.752$

Table C59. Median Test between Other nonmembers and Other members of intercollegiate athletics in response to Swanson's Inventory

	Other Nonmembers	Other Members	Totals
Less Progressive	23	83	106
More Progressive	19	88	107
Totals	42	171	213

df = 1

$X^2 = 0.303$

Table C60. Median Test between senior nonmembers and senior members of musical organizations in response to Swanson's Inventory

	Senior Nonmembers	Senior Members	Totals
Less Progressive	10	56	66
More Progressive	5	62	67
Totals	15	118	133

df = 1

$X^2 = 1.271$

Table C61. Median Test between senior nonmembers and Other nonmembers of musical organizations in response to Swanson's Inventory

	Senior Nonmembers	Other Nonmembers	Totals
Less Progressive	41	120	161
More Progressive	77	84	161
Totals	118	204	322

df = 1

x^2 = 17.335

Table C62. Median Test between senior members and Other members of musical organizations in response to Swanson's Inventory

	Senior Members	Other Nonmembers	Totals
Less Progressive	8	101	109
More Progressive	7	103	110
Totals	15	204	219

df = 1

x^2 = 0.0003

Table C63. Median Test between senior members and senior nonmembers of religious organizations in response to Swanson's Inventory

	Senior Nonmembers	Senior Members	Totals
Less Progressive	55	11	66
More Progressive	59	8	67
Totals	114	19	133

df = 1

$x^2 = 0.281$

Table C64. Median Test between senior nonmembers and Other nonmembers of religious organizations in response to Swanson's Inventory

	Senior Nonmembers	Other Nonmembers	Totals
Less Progressive	45	92	137
More Progressive	69	69	138
Totals	114	161	275

df = 1

$x^2 = 7.643$

Table C65. Median Test between senior nonmembers and Other members of religious organizations in response to Swanson's Inventory

	Senior Nonmembers	Other Members	Totals
Less Progressive	46	37	83
More Progressive	68	15	83
Totals	114	52	166

df = 1

X^2 = 12.349

Table C66. Median Test between senior members and Other nonmembers of religious organizations in response to Swanson's Inventory

	Senior Members	Other Nonmembers	Totals
Less Progressive	9	81	90
More Progressive	10	80	90
Totals	19	161	180

df = 1

X^2 = 0.000

Table C67. Median Test between senior members and Other members of religious organizations in response to Swanson's Inventory

	Senior Members	Other Members	Totals
Less Progressive	7	28	35
More Progressive	12	24	36
Totals	19	52	71

df = 1

x^2 = 1.001

Table C68. Median Test between Other nonmembers and Other members of religious organizations in response to Swanson's Inventory

	Other Nonmembers	Other Members	Totals
Less Progressive	77	29	106
More Progressive	84	23	107
Totals	161	52	213

df = 1

x^2 = 0.699

Table C69. Median Test between senior nonmembers and senior members of intramural athletics in response to Swanson's Inventory

	Senior Nonmembers	Senior Members	Totals
Less Progressive	35	31	66
More Progressive	38	29	67
Totals	73	60	133

df = 1

$X^2 = 0.063$

Table C70. Median Test between senior nonmembers and Other nonmembers of intramural athletics in response to Swanson's Inventory

	Senior Nonmembers	Other Nonmembers	Totals
Less Progressive	25	75	100
More Progressive	48	52	100
Totals	73	127	200

df = 1

$X^2 = 10.441$

Table C71. Median Test between senior nonmembers and Other members of intramural athletics in response to Swanson's Inventory

	Senior Nonmembers	Other Members	Totals
Less Progressive	31	53	84
More Progressive	52	33	85
Totals	83	86	169

df = 1

$x^2 = 9.011$

Table C72. Median Test between senior members and Other nonmembers of intramural athletics in response to Swanson's Inventory

	Senior Members	Other Nonmembers	Totals
Less Progressive	21	72	93
More Progressive	39	55	94
Totals	60	127	187

df = 1

$x^2 = 6.827$

Table C73. Median Test between senior members and Other members of intramural athletics in response to Swanson's Inventory

	Senior Members	Other Members	Totals
Less Progressive	23	50	73
More Progressive	37	36	73
Totals	60	86	146

df = 1

$x^2 = 4.781$

Table C74. Median Test between Other nonmembers and Other members of intramural athletics in response to Swanson's Inventory

	Other Nonmembers	Other Members	Totals
Less Progressive	65	41	106
More Progressive	62	45	107
Totals	127	86	213

df = 1

$x^2 = 0.131$

Table C75. Median Test between senior nonmembers and senior members of "other organizations" in response to Swanson's Inventory

	Senior Nonmembers	Senior Members	Totals
Less Progressive	51	15	66
More Progressive	59	8	67
Totals	110	23	133

df = 1

$X^2 = 2.003$

Table C76. Median Test between senior nonmembers and Other nonmembers of "other organizations" in response to Swanson's Inventory

	Senior Nonmembers	Other Nonmembers	Totals
Less Progressive	45	97	142
More Progressive	65	78	143
Totals	110	175	285

df = 1

$X^2 = 5.129$

Table C77. Median Test between senior nonmembers and Other members of "other organizations" in response to Swanson's Inventory

	Senior Nonmembers	Other Members	Totals
Less Progressive	46	28	74
More Progressive	64	10	74
Totals	110	38	148

df = 1

x^2 = 10.232

Table C78. Median Test between senior members and Other nonmembers of "other organizations" in response to Swanson's Inventory

	Senior Members	Other Nonmembers	Totals
Less Progressive	9	90	99
More Progressive	14	85	99
Totals	23	175	198

df = 1

x^2 = 0.787

Table C79. Median Test between senior members and Other members of "other organizations" in response to Swanson's Inventory

	Senior Members	Other Members	Totals
Less Progressive	9	22	31
More Progressive	14	16	30
Totals	23	38	61

df = 1

$X^2 = 0.796$

Table C80. Median Test between Other nonmembers and Other members of "other organizations" in response to Swanson's Inventory

	Other Nonmembers	Other Members	Totals
Less Progressive	85	21	106
More Progressive	90	17	107
Totals	175	38	213

df = 1

$X^2 = 0.304$

Table C81. Median Test between senior nonmembers and senior members of off-campus organizations in response to Swanson's Inventory

	Senior Nonmembers	Senior Members	Totals
Less Progressive	58	8	66
More Progressive	63	4	67
Totals	121	12	133

df = 1

$X^2 = 0.874$

Table C82. Median Test between senior nonmembers and Other nonmembers of off-campus organizations in response to Swanson's Inventory

	Senior Nonmembers	Other Nonmembers	Totals
Less Progressive	45	114	159
More Progressive	76	83	159
Totals	121	197	318

df = 1

$X^2 = 12.006$

Table C83. Median Test between senior nonmembers and Other members of off-campus organizations in response to Swanson's Inventory

	Senior Nonmembers	Other Members	Totals
Less Progressive	56	13	69
More Progressive	65	3	68
Totals	121	16	137

df = 1

X^2 = 5.584

Table C84. Median Test between senior members and Other nonmembers of off-campus organizations in response to Swanson's Inventory

	Senior Members	Other Nonmembers	Totals
Less Progressive	6	98	104
More Progressive	6	99	105
Totals	12	197	209

df = 1

X^2 = 0.000

Table C85. Median Test between senior members and Other members of off-campus organizations in response to Swanson's Inventory

	Senior Members	Other Members	Totals
Less Progressive	4	10	14
More Progressive	8	6	14
Totals	12	16	28

df = 1

X^2 = 1.312

Table C86. Median Test between Other nonmembers and Other members of off-campus organizations in response to Swanson's Inventory

	Other Nonmembers	Other Members	Totals
Less Progressive	96	10	106
More Progressive	101	6	107
Totals	197	16	213

df = 1

X^2 = 0.639

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Table D1. Chi-square Test between the proportions of senior nontransfer and senior transfer groups with progressive-oriented patterns in response to the Educational Viewpoints Inventory

	Senior Nontransfers	Senior Transfers	Totals
Progressive Pattern	19	19	38
Other Patterns	33	62	95
Totals	52	81	133

$df = 1$

$X^2 = 2.053$

Table D2. Chi-square Test between the proportions of senior nontransfer and Other transfer students with progressive-oriented patterns in response to the Educational Viewpoints Inventory

	Senior Nontransfers	Other Transfers	Totals
Progressive Patterns	19	14	33
Other Patterns	33	63	96
Totals	52	77	129

$df = 1$

$X^2 = 4.572$

Table D3. Chi-square Test between the proportions of senior nontransfer and Other nontransfer students with progressive-oriented patterns in response to the Educational Viewpoints Inventory

	Senior Nontransfers	Other Nontransfers	Totals
Progressive Patterns	19	30	49
Other Patterns	33	106	139
Totals	52	136	288

df = 1

$x^2 = 4.630$

Table D4. Chi-square Test between the proportions of senior transfer and Other transfer students with progressive-oriented patterns in response to the Educational Viewpoints Inventory

	Senior Transfers	Other Transfers	Totals
Progressive Patterns	19	14	33
Other Patterns	62	63	125
Totals	81	77	217

df = 1

$x^2 = 0.346$

Table D5. Chi-square Test between the proportions of senior transfer and Other nontransfer students with progressive-oriented patterns in response to the Educational Viewpoints Inventory

	Senior Transfers	Other Nontransfers	Totals
Progressive Patterns	19	30	49
Other Patterns	62	106	168
Totals	81	136	217

df = 1

$X^2 = 0.004$

Table D6. Chi-square Test between the proportions of Other transfer and Other nontransfer students with progressive-oriented patterns in response to the Educational Viewpoints Inventory

	Other Transfers	Other Nontransfers	Totals
Progressive Patterns	14	30	44
Other Patterns	63	106	169
Totals	77	136	213

df = 1

$X^2 = 0.255$

Table D7. Chi-square Test between the proportions of senior nontransfer and senior transfer students with logical empiricist-oriented patterns in response to the Educational Viewpoints Inventory

	Senior Nontransfers	Senior Transfers	Totals
Logical Empiricism Patterns	20	34	54
Other Patterns	32	47	79
Totals	52	81	133

df = 1

$X^2 = 0.049$

Table D8. Chi-square Test between the proportions of senior nontransfer and Other transfer students with logical empiricist-oriented patterns in response to the Educational Viewpoints Inventory

	Senior Nontransfers	Other Transfers	Totals
Logical Empiricism Patterns	20	48	68
Other Patterns	32	29	61
Totals	52	77	129

df = 1

$X^2 = 6.173$

Table D9. Chi-square Test between the proportions of senior nontransfer and Other nontransfer students with logical empiricist-oriented patterns in response to the Educational Viewpoints Inventory

	Senior Nontransfers	Other Nontransfers	Totals
Logical Empiricism Patterns	20	61	81
Other Patterns	32	75	107
Totals	52	136	188

df = 1

$X^2 = 0.391$

Table D10. Chi-square Test between the proportions of senior transfer and Other transfer students with logical empiricist-oriented patterns in response to the Educational Viewpoints Inventory

	Senior Transfers	Other Transfers	Totals
Logical Empiricism Patterns	34	48	82
Other Patterns	47	29	76
Totals	81	77	158

df = 1

$X^2 = 5.766$

Table D11. Chi-square Test between the proportions of senior transfer and Other nontransfer students with logical empiricist-oriented patterns in response to the Educational Viewpoints Inventory

	Senior Transfers	Other Nontransfers	Totals
Logical Empiricism Patterns	34	61	95
Other Patterns	47	75	122
Totals	81	136	217

df = 1

$X^2 = 0.073$

Table D12. Chi-square Test between the proportions of Other nontransfer and Other transfer students with logical empiricist-oriented patterns in response to the Educational Viewpoints Inventory

	Other Transfers	Other Nontransfers	Totals
Logical Empiricism Patterns	48	61	109
Other Patterns	29	75	104
Totals	77	136	213

df = 1

$X^2 = 5.336$

Table D13. Chi-square Test between the proportions of senior nontransfer and senior transfer students with predictable logical empiricist-oriented patterns in response to the Educational Viewpoints Inventory

Patterns: Logical Empiricism	Senior Nontransfers	Senior Transfers	Totals
More Predictable	16	25	41
Less Predictable	4	9	13
Totals	20	34	54

df = 1

$X^2 = 0.043$

Table D14. Chi-square Test between the proportions of senior nontransfer and Other transfer students with predictable logical empiricist-oriented patterns in response to the Educational Viewpoints Inventory

Patterns: Logical Empiricism	Senior Nontransfers	Other Transfers	Totals
More Predictable	16	38	54
Less Predictable	4	10	14
Totals	20	48	68

df = 1

$X^2 = 0.000$

Table D15. Chi-square Test between the proportions of senior nontransfer and Other nontransfer students with predictable logical empiricist-oriented patterns in response to the Educational Viewpoints Inventory

Patterns: Logical Empiricism	Senior Nontransfers	Other Nontransfers	Totals
More Predictable	16	35	51
Less Predictable	4	26	30
Totals	20	61	81

df = 1

$X^2 = 2.406$

Table D16. Chi-square Test between the proportions of senior transfer and Other transfer students with predictable logical empiricist-oriented patterns in response to the Educational Viewpoints Inventory

Patterns: Logical Empiricism	Senior Transfers	Other Transfers	Totals
More Predictable	25	38	63
Less Predictable	9	10	19
Totals	34	48	82

df = 1

$X^2 = 0.109$

Table D17. Chi-square Test between the proportions of senior transfer and Other nontransfer students with predictable logical empiricist-oriented patterns in response to the Educational Viewpoints Inventory

Patterns: Logical Empiricism	Senior Transfers	Other Nontransfers	Totals
More Predictable	25	35	60
Less Predictable	9	26	35
Totals	34	61	95

df = 1

$X^2 = 1.802$

Table D18. Chi-square Test between the proportions of Other transfer and Other nontransfer students with predictable logical empiricist-oriented patterns in response to the Educational Viewpoints Inventory

Patterns: Logical Empiricism	Other Transfers	Other Nontransfers	Totals
More Predictable	38	35	73
Less Predictable	10	26	36
Totals	48	61	109

df = 1

$X^2 = 4.822$

Table D19. Chi-square Test between the proportions of Other nontransfer and Other transfer students with unclassified patterns in response to the Educational Viewpoints Inventory

	Other Nontransfers	Other Transfers	Totals
Unclassified Patterns	45	14	59
Other Patterns	91	63	154
Totals	136	77	213

df = 1

$X^2 = 4.735$

Table D20. Chi-square Test between the proportions of Other nontransfer and senior transfer students with unclassified patterns in response to the Educational Viewpoints Inventory

	Other Nontransfers	Senior Transfers	Totals
Unclassified Patterns	45	28	73
Other Patterns	91	53	144
Totals	136	81	217

df = 1

$X^2 = 0.054$

Table D21. Chi-square Test between the proportions of Other nontransfer and senior nontransfer students with unclassified patterns in response to the Educational Viewpoints Inventory

	Other Nontransfers	Senior Nontransfers	Totals
Unclassified Patterns	45	13	58
Other Patterns	91	39	130
Totals	136	52	188

df = 1

$X^2 = 0.805$

Table D22. Chi-square Test between the proportions of Other transfer and senior transfer students with unclassified patterns in response to the Educational Viewpoints Inventory

	Other Transfers	Senior Transfers	Totals
Unclassified Patterns	14	28	42
Other Patterns	53	53	106
Totals	77	81	148

df = 1

$X^2 = 2.378$

Table D23. Chi-square Test between the proportions of Other transfer and senior nontransfer students with unclassified patterns in response to the Educational Viewpoints Inventory

	Other Transfers	Senior Nontransfers	Totals
Unclassified Patterns	14	13	27
Other Patterns	63	39	102
Totals	77	52	129

df = 1

$X^2 = 0.629$

Table D24. Chi-square Test between the proportions of senior transfer and senior nontransfer students with unclassified patterns in response to the Educational Viewpoints Inventory

	Senior Transfers	Senior Nontransfers	Totals
Unclassified Patterns	28	13	41
Other Patterns	53	39	92
Totals	81	52	133

df = 1

$X^2 = 0.947$

APPENDIX E

Information included from the research report titled:

"The Operational Definition and Measurement of Educational Philosophy." Unpublished Ph.D. dissertation, University of Minnesota, 1955. By Swanson, Robert S.

1. Definition of Essentialism and Progressivism in Terms of the Epistemological, Metaphysical, and Ethical Theses.

2. Panel of Experts Who Criticized and Contributed to the Formulation of the Operational Definition Developed by Swanson.

APPENDIX E1

DEFINITION OF ESSENTIALISM AND PROGRESSIVISM IN TERMS OF THE EPISTEMOLOGICAL, METAPHYSICAL, AND ETHICAL THESES

Essentialism was defined thus:

> The epistemological thesis. Knowledge is thought of as revelation of ultimate reality. It is not a creation but a realization of the absolute, the essential. Truth is tested in terms of its conformance to reality, sometimes scientific reality. Knowledge is internally consistent.
>
> The metaphysical thesis. Ultimate reality is composed of rather fixed entities. They derive from some primary authority, religious or scientific, and are independent of the learner or the learning situation.
>
> The ethical thesis. Values are objective; they derive from their designer rather than from their user. Instrumental values may exist but are of lower level. Values are based in a supreme authority, sometimes religious, sometimes scientific (62, 59-60).

Progressivism was defined thus:

> The epistemological thesis. Truth is made by the process of verification. It is dynamic and specific, rather than stable and general. Information becomes knowledge when it is judged to be relevant to the solution of a problem and this judgment is verified.
>
> The metaphysical thesis. Reality is made up of dynamic ever-evolving entities. It must be defined at a particular point in time. The conception of reality by the individual determines, in part, its nature. Novelty is genuine, rather than the revelation of an antecedently complete reality.
>
> The ethical thesis. Values are subjective and instrumental. Values have worth insofar as they are good for something. They are tentative and ever-developing. The hierarchy of values is determined instrumentally (60-61).

APPENDIX E2

PANEL OF EXPERTS WHO CRITICIZED AND CONTRIBUTED TO THE FORMULATION OF THE OPERATIONAL DEFINITION DEVELOPED BY SWANSON

Dr. Robert H. Beck, Professor of History and Philosophy of Education, University of Minnesota, Minneapolis, Minnesota.

Dr. Robert L. Brackenbury, Head, Department of History and Philosophy of Education, University of Southern California, Los Angeles, California.

Dr. Hugh C. Black, Associate Professor of Philosophy and Education, The Rice Institute, Houston, Texas.

Dr. John S. Brubacher, Professor of Education, Yale University, New Haven, Connecticut.

Miss Mary Corcoran, Ph.D. Candidate, College of Education, University of Minnesota, Minneapolis, Minnesota.

Mr. Adrian Dupuis, Teacher of Philosophy of Education and Director of Student Teaching, College of St. Teresa, Winona, Minnesota.

Mr. M. M. Price, Dean of Men, Associate Professor of Education, Stout State College, Menomonie, Wisconsin.

Mr. Ethan Svendsen, Ph.D. Candidate, College of Education, University of Minnesota, Minneapolis, Minnesota.

Dr. Lawrence Thomas, Associate Professor of Education, Stanford University, Stanford, California (86-87).