Religious attitudes of pre-service teacher education majors

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RELIGIOUS ATTITUDES OF PRE-SERVICE
TEACHER EDUCATION MAJORS

by

Robert John Vanden Branden

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I. INTRODUCTION

Much attention has been given in recent years in the courts, Congress, and state legislatures regarding separation of Church and State especially as this doctrine applies to the public schools. The constitutionality of compulsory prayers, Bible reading, release time, common activities, and shared facilities has been tested in the courts, debated in legislatures, and/or attacked by the news media. In Iowa, for example, the 1965 legislature considered legislation regarding bus transportation for nonpublic school children.

While all of these aspects are most assuredly part of the separation of Church and State dilemma, very little attention, legislation, or research has been directed toward the classroom activities of teachers. It seems likely that some of these activities could contain religious overtones because of the background and convictions of the teachers.

Many people believe that the beliefs of the teacher are transferred to the pupils. Manske (38) stated that "Teachers who believed it their duty to change pupils' attitudes tended to influence pupils to conform to their views." The teacher's attitude may be important in forming or changing the attitudes of his pupils.

One method of attack and obtaining research data on the attitudes of teachers is to measure the attitudes of pre-service teachers. The expression, pre-service teachers, was
used in this study as an abbreviation for pre-service teacher education majors. Pre-service teachers were defined as college students who are completing their professional preparation to teach and graduated during the first six months of 1965.

A. Purpose and Objectives

The purpose of this study was to determine the religious attitudes of pre-service teacher education majors at three institutions of higher learning in Iowa during the six months period prior to graduation.

The specific objectives were as follows:

1. to develop an instrument to measure the religious attitudes of pre-service teachers.

2. to determine the tendency of pre-service teachers to select religious answers to certain hypothetical classroom questions.

3. to establish an attitude profile of pre-service teachers who select religious answers to said questions.

4. to determine differences, if any, in the results obtained when the pre-service teachers were classified by;
   a. the college or university they were attending,
   b. secondary and elementary,
   c. male and female,
   d. religious affiliation,
e. areas of concentration by those preparing to teach in secondary schools.

5. to determine correlations between the results of the Teacher Attitude Inventory constructed for this study and;
   a. the grade point averages of the pre-service teachers,
   b. the score of the pre-service teachers on the religious scale of the "Study of Values" by Allport, Vernon, and Lindzey (1).

6. to contribute information specific to the subject of the teaching of religion by the teacher in informal classroom situations.

7. to contribute pertinent information to the current American dilemma regarding the removal of religion from the public schools by legislative and/or judicial action.

8. to develop a benchmark study which may be used to determine the religious attitudes of in-service teachers.

B. Assumptions and Delimitations

The basic assumption was that the Teacher Attitude Inventory, as the instrument constructed for this study was named, measures the religious attitudes of pre-service teachers.
A secondary assumption was that the Allport, Vernon, and Lindzey "Study of Values" was the most appropriate instrument with which to compare the results of the Teacher Attitude Inventory.

A primary delimitation of the study was the definition of religious attitudes: tendencies to act in such a way as to attain certain values which are conceived of as residing in and proceeding from a power or powers which when dramatized as personal are thought of as God or gods.

There were three delimitations imposed in this study in relation to the college students studied. These students were limited to those who:

1. were pre-service teachers at Iowa State University of Science and Technology, Drake University, and William Penn College.
2. were academically prepared to teach after graduation.
3. would graduate from their respective schools during the first six months of 1965.

A further delimitation was that the study was directed to the religious atmosphere in informal teaching situations in the public schools; not with formal religious instruction or exercises.

C. Method and Organization

The method was to construct an attitude inventory which was utilized to determine the prevalence of pro-religious
answers that pre-service teachers give to specific, selected, hypothetical classroom questions in such a manner as to determine variation among:

1. the college or university they were attending.
2. secondary and elementary pre-service teachers.
3. male and female pre-service teachers.
4. areas of concentration in preparation for teaching by the secondary pre-service teachers.
5. religious affiliation.

Correlations between the scores of the Teacher Attitude Inventory constructed for this study and:

1. the grade point averages of the pre-service teachers.
2. the religious scale of the third edition of the "Study of Values" by Allport, Vernon, and Lindzey (1) were made.

Statistical treatment of the data accumulated in the investigation included chi-square and Pearson product-moment correlation. A stratification design was used and the correlation coefficients established were interpreted in terms of their statistical significance in exploratory relationships.

The review of related literature was divided into five areas to present the pertinent information methodically. Part A briefly reviewed the literature leading to the establishment of the definition of religion which was used in this research. Part B dealt with the historical-Constitutional-legal bases of the religious tradition in America. Part C presented the role
of religion in American public education. Part D reviewed literature pertinent generally to religious attitudes and specifically to the religious attitudes of public school teachers and students. Part E reviewed the literature pertaining to the construction of attitude scales and/or tests which measure religious attitudes.

Chapter III dealt with the methods and procedures used to construct the instrument with which the pre-service teacher education majors of the three institutions were tested; the methods of administration of the Teacher Attitude Inventory, as the instrument constructed was named, and the Allport, Vernon, and Lindzey (1) "Study of Values"; and the methods and procedures used in scoring and interpreting the results.

Chapter IV stated and interpreted the results of the administration of the Teacher Attitude Inventory. Several comparisons and correlations were reported. Scores on the Teacher Attitude Inventory made by the various classifications of pre-service teachers were compared as were the frequency distributions of the choices of answers to the Teacher Attitude Inventory items related to religious attitudes. Correlations were made between the scores of the pre-service teachers on the Teacher Attitude Inventory and:

1. their grade point averages.

2. the score of the pre-service teachers on the religious scale of the "Study of Values" by Allport, Vernon, and Lindzey (1).
The Discussion, Chapter V, included a discussion of the instrument constructed for this research and comparisons of the findings reported in Chapter IV.

The Summary, Chapter VI, included a review of the design of the study, a discussion and interpretation of the results, and recommendations for further study.
II. REVIEW OF RELATED LITERATURE

To measure the religious attitudes of pre-service teachers required more than a review of the religious attitude tests in the literature. To present the information related to the religious attitudes of pre-service teacher education majors logically and methodically, the review of literature was organized into several divisions. The divisions were organized to gradually narrow the scope of the review to the specific point of interest of this research which is the religious attitudes of pre-service teachers limited to an informal classroom situation followed by a review of such tests as are available to measure such attitudes.

The logic employed in the review of literature was to establish a definition of religion generally, determine the bases for the separation of Church and State in American public schools to arrive at the focal point of the religious attitudes which teachers might carry into the classroom. The survey of literature then was applied to the specific problem of how to measure this attitude of teachers in an informal classroom situation.

A. Religion Defined

Religion has been a dominant factor in man's behavior since the beginning of recorded history. It seems strange that with centuries of acceptance of religion as a force in
man's relationship to his environment that man should have such a hazy connotation of the meaning of religion. Attempts to define religion have resulted in a wide variety of meanings. Leuba (36) has collected and enumerated as many as forty-eight recent definitions of religion and then adds two of his own.

The definition used in this investigation must be somewhat arbitrary as it must be confined to some one definition of religion. Definitions found in the literature ranged from such short definitions as the consciousness of social values to definitions which ramble on and on with no attempt to arrive at an Aristotelian definition.

Symington (58) condensed diversified connotations into comprehensible and logical statements. He described religions of several types but they have a common theme. A religion seems to be better defined as an attitude or readiness to act than as a consciousness. As religion is usually conceived, these tendencies are experiences of which we are not necessarily conscious, but which probably belong to the subconscious. It involves a power, something external, toward which one looks with fear or hope. The religion of the primitive type looks toward powers which are conceived as being able to give values such as food, safety, or victory. Religions of the national type worship powers conceived of as giving values that the tribe or nation seeks, such as an ideal state of existence or some kind of salvation. In philosophical religions, God is the totality of life values as the concern
is with what real values the supreme power has to offer. The supreme power in moral religions is conceived of as maintaining the moral order of the universe so these devotees strive for ideal conduct. Symington (58) offered his own definition as "Religion is the attitude of an individual or group to those things conceived to be of highest value."

Houf (28) did not offer a new definition, but suggested that it may be easier and just as helpful to keep in mind the following three factors that practically always appear in an analysis of religions.

These are (a) belief in a superhuman power (or powers) which may or may not be personified, (b) desire for certain values, material and spiritual, and (c) characteristic adjustment to the superhuman power for the purpose of securing these values.

He contended that these factors are present in all religions and are found in altered form in the contemporary psychological definitions.

For those who consider science and religion as the two extremes of a religious continuum, the following statements by Harman (27), a physician, may come as a shock.

God is the focus of all religious thought. Belief in God is the one essential common denominator of all religion. These statements...will be agreed as statements of fact by all, whether or not they accept the belief implied in the statements. To deny the truth of these two statements would be to deny all history. There can be no more certain facts in human history than these.

The definition pertinent to this research is actually a
condensation of many of those surveyed. Religion is the attitude of an individual or group to those things conceived to be of highest value which involves a personal relationship with a higher power or powers referred to as God or gods. This writer agreed with Vincent (67) that a functional belief in God and/or sin is not necessarily correlated with formal church affiliation.

B. Religion in the United States

States may be classified by looking at the attitude the state takes toward God. The United States has a measure of separation between Church and State, but each individual citizen has complete freedom of religion. As Boles (8) stated:

The conclusion here is that religion is a matter between man and his God. The lesson of history is that whenever another individual or a state attempts to intervene, you had better watch out. There is going to be trouble.

America has been classified as a covenant nation (2). It recognizes its dependence upon God and its responsibility toward God. In a covenant nation, official thinking and public institutions reflect a faith in the existence and the importance of divine providence. Anderson (2, p. 264) referred to excerpts from the U. S. Army Character Guidance Discussion Topics for the following statements. Dependence upon God by American officials was easily demonstrated by the following examples: the President of the United States asks the citizens every Thanksgiving Day to give thanks to
Almighty God for the blessings of the past year and to implore Him for His protection and benediction in the year to come; the sessions of Congress are opened with prayer; our public officials normally take their oaths of office by placing their right hand on a Bible. Our money also expresses our nation's dependence upon God. The significant phrase "In God We Trust" is found on our coins. On a dollar bill the picture of the Great Seal of the United States includes the Latin inscription, "Annuit coeptis," which means "He has prospered our beginnings."

Anderson (2, p. 264) further explained our nation's relations to religion with historical references such as the following; the Declaration of Independence explicitly recognized God's existence and the dependence upon Him for the rights of man, the establishment of government, and the whole cause of freedom.

According to Anderson (2, p. 265) there are a great many other references to God in the freedom documents of our nation from the Mayflower Compact forward. The preceding examples should clearly establish the relationship of the United States to religion as defined in this study.

The opinion polls have consistently shown what an overwhelming majority of the American people believe in God; for example, (71) a Gallup poll released in 1948 indicated that 94 percent of the Americans polled expressed a personal belief in God.
Basically the American people derive their faith from the Judeo-Christian tradition. This investigation was based upon the traditional concepts of the Jew and the Christian because these concepts are endorsed by the overwhelming majority of the American people.

Surprisingly, Williams (71) observed that Catholicism, Judaism, and Protestantism are all stronger in the United States than anywhere else in the world, that is, the percentage of the population attending worship services in the various churches and synagogues is probably greater than in any other large nation. However, as Cuber, Harper, and Kenkel (15) generalized, probably no more than 60 percent of the population is church affiliated and these are divided among over 250 denominations with great varieties of beliefs and practices. The majority of the population is affiliated with a church, and, as Williams stated (71):

Moreover, the faith of a considerable portion of the non-church members, though they support no religious institution, is in fact derived from one or another of the Christian or Jewish sects.

C. Religion in American Public Education

Houf (28) stated: "Religion provides the most powerful motivation to learning and to social behavior." While this may be true, to what extent can this motivating force be employed in the American public schools?

Boles (8) presented the most complete answer to date in his detailed coverage of the legal and historical background
of our present practices of religion in the public schools. He cited the United States Constitution bases for the church-state separation; reviewed the decisions of federal and state courts on Bible reading and other religious practices; cited the statute law of states; examined the views of well-known educators, public officials, and publications; and described and discussed the important Supreme Court cases involving religion in the public schools. His work is especially timely because, as Professor Boles explained (8), "the basic issue of church-state separation, far from being resolved, has apparently only begun to be challenged in our Courts."

According to Boles (8) one of the fundamental propositions basic to the American public school system, within the scope of this research, is that sectarian instruction shall not be given in public schools. However, even his (8) book is concerned primarily with the formal instruction of religion in the public schools.

The Commission on Religion in the Public Schools (114) reviewed the law in a simple, accurate, and straight-forward manner and suggested constructive policies and practices to meet existing and possible conflicts in the arena of religion and the public schools. Of especial interest to this research was the Commission's (114) reference to the United States Supreme Court's definition of religion as being not entirely clear. This was not surprising since even a cursory review of literature clearly indicates that there is no agreement
upon a single definition of religion. The theistic bodies do not agree among themselves and the nontheistic philosophers contribute additional definitions. This very fact necessitated the carefully limited definition upon which this research was based which clearly states the distinction between religion and nontheistic philosophies.

George La Noue (34, p. 126) pointed out that a state establishment of religion occurs when the machinery of the school administration is manipulated for a religious purpose. He (34, P. 126) listed several practices which can and cannot be done by the schools as follows:

- Student organizations cannot carry on religious exercises in the schools because it could not occur without the sanction and cooperation of public authorities.
- Religion can be objectively studied in public schools and the Bible can be used as a reference work.
- Periods of silent meditation (not prayer) are constitutional.
- Schools can put on a religious play.
- A teacher can assign a story with a religious or sectarian theme without violating the establishment clause so long as there is no systematic scheme to inculcate religion.

La Noue's (34, p. 126) remarks regarding the pupil-teacher relations were very pertinent to this research.

Should students be permitted to ask questions about religious truth and may teachers in response to questions answer regarding their personal convictions? e.g., "Teacher, did God create the world?" It must be recognized that freedom of speech and academic freedom do not have quite the same quality for a public school teacher as for a college professor, but nothing in the establishment clause would bar either an honest question or answer. There are, of course, professional considerations
regarding the maturity of students and explanation of opposing points of view; but within these canons of good teaching, religious questions may be discussed vigorously.

His (34) summarization and the findings of the Commission on Religion in the Public Schools (14) gave evidence that God has not necessarily been removed from the public school classroom by the Constitution of the United States or the recent interpretations of the Constitution by the United States Supreme Court. The Commission (14) found that the Constitution not only leaves organized religion undamaged, but on the bases of their inquiry finds hope for a deeper place for religion in our culture.

The churches of the United States are greatly concerned with advancing the moral education of the young, but the debate centers mainly upon the public schools because more Catholic, Protestant, and Jewish children attend public schools than parochial schools (8).

The implications that the public schools somehow produced irreligious students when compared with students of the parochial schools were not borne out by the evidence of recent studies.

Larson (35, p. 25) raised some questions, including: "Are there differences in attitudes, any differences in behavior?" and immediately answers by stating:

...on the basis of what I see, I am convinced that the graduate of the public school compares favorably with the graduate of the private or the parochial school. I have seen no facts which justify any other conclusion.
More recently Erickson, as quoted in an editorial by Elam (20, p. 121), stated:

For several months I have sought evidence that sectarian schools really do affect the values of children, evidence that the parochial schools make their pupils more religious, more loyal to the church, etc. As yet I have found no evidence whatever that holds up, so said Donald A. Erickson taking part in discussions at Phi Delta Kappa's symposium on the role of the school in value formation and change, held last July at Boston University. He added that the differences in values, attitudes, and habits between school populations are more likely attributable to the differences in home background than to the school experiences.

According to Hunt (30, p. 333) the public schools teach and have always taught ethical and character values. The theistic commitment of the citizenry to a belief in God and in inalienable rights stemming from God indicated to Hunt (30, p. 333) that: "The public schools should both teach these values and seek commitments to them."

In a review of Hunt's article, Cassels (13, p. 333) concluded that it is practically impossible for public schools to maintain a strict neutrality on the question of God's existence when it is considered that only four percent of the American people classify themselves as atheists. The results of a studied neutrality would be practical support for the view of this small minority that God does not count.

To clearly establish the policy to be followed in a specific community, La Noue (34, p. 127) suggested, in his article, that:

A good procedure might be for the leaders of our
schools to make a statement similar to the following at the beginning of each school year: This public school, according to the decisions of the United States Supreme Court on the First and Fourteenth Amendments of the Federal Constitution, engages in no religious exercises. These decisions and our compliance with them are in no way motivated by a hostility towards religion but are instead based on the belief that true religion and good government are served by a separation of church and state. This principle in no way inhibits students' asking questions concerning religion or carrying on religious discussions. It does mean, however that this school cannot offer courses in religious history or beliefs according to any particular tradition. This policy in no way implies that such a study is unimportant, but it is rather a simple reflection of the constitutional limitations on the functions of a state agency and recognition of the pluralism of American society. As an educational institution, however, this school affirms that religious and ethical questions are at the center of a liberal education, and we urge students interested in intensive study of such questions to pursue them with their families and the institutions of their separate traditions.

As evidence that many in public school work are very concerned with how the public schools can better deal with religion, an editorial summary by Anderson (3, p. 279) stated:

To judge by the number of manuscripts submitted to Phi Delta Kappan for possible publication, the subject of Religion in Education is second, in interest to educators, only to that of the broad field of the teacher himself. This concern is not surprising in view of the community of interest, indeed, almost an "identity" of interest of teacher and preacher.

And, however varied in degrees of piety modern teachers may be, few will fail to acknowledge the Christian foundations of education. Emphasis upon individual worth, upon human dignity, upon belief in the improvability of man and in his responsibility for his acts, are all basic tenets in the Christian philosophy. They are also the assumptions and presumptions
underlying most educational thought and practice.

An article by Grinnell (26, p. 211) emphasized this viewpoint when he stated:

Much of what is bad or good in each of us is the result of our following the example of someone we admired. Every teacher day after day all his life long is an example, good or bad, strong or weak, just or unjust, generous or ungenerous, kind or unkind. ...Too many teachers have a strangely unrealistic notion that what they are is not in any sense reflected in their teaching and in their out-of-class relations with their students.

Representative reports were found regarding religion in textbooks (45), religion in private universities (43), the teaching of religion in state universities (5), teacher education and religion (52), the role of administrators (14) and (34), religion in the teaching of science (4, p. 280), the teaching staff composition (14), and relationships between church leadership and public school leadership (31). However, in all this literature virtually no studies were reported regarding the informal religious instruction by the teacher in the public school classroom.

D. Religious Attitudes of Teachers and Students

In attempting to study the effect of the attitude of the teacher upon the student, this writer came to the same conclusion as Gage (22) that evidence is surprisingly meager concerning the hypothesis that teacher attitudes are significant for student learning.

Briggs (10), after noting the scarcity of research about
the effect of teachers' attitudes upon the conduct of pupils, stated:

Administrators should know something of the attitudes of the members of their teaching staffs toward the relative seriousness of behavior problems, and also toward important life problems.

A few studies were found which are somewhat pertinent to this research. Symonds (59) concluded that attitudes are not necessarily created in school through information-giving instruction and that school training has little influence in modifying the attitudes which children bring to school. These conclusions were significantly corroborated by Smith (53) in a comparative analysis of the attitudes held by different groups of high school seniors, their parents, and their teachers. To illustrate the observation by Briggs (10) that: "...the research that has been done on the subject is marked by the contradictory nature of its conclusions," a recent dissertation by Fowler (21) indicated that teacher attitudes are related to teacher and pupil behavior and that the teacher attitudes and personality characteristics are related to classroom emotional climate.

A few recent studies were found which were directed toward the attitudes of pre-service education majors, but the emphasis was, in each case, directed toward attitudes or interests other than those specifically included in this study. Notable of mention were Southworth (55) and Bowman (9), but the only studies which contained usable information
were by Mizzitelli (40), Munson (41), and Vail (66). The most significant finding was in Vail's (66) dissertation where she stated:

Since the Allport-Vernon Study of Values test did not show any significant differences between the least promising and the most promising teachers, some other devices for exploring evaluative attitudes should be tried.

When the literature search was directed to the specific religious attitude or attitude cluster (33) of teachers or pre-service teachers, the findings were scarce indeed. The importance of the fundamental attitudes was pointed out by Mayer (39, p. 248) when he stated:

The history of religion indicates the importance of fundamental attitudes. Education will never achieve complete effectiveness unless it appeals to our sense of idealism, unless knowledge is applied to daily living, and unless teachers have almost a missionary faith in the transforming power of our schools.

Religion can give to education models of identification. Great religious leaders like Buddha, Jesus, and Gandhi were not merely spiritual prophets, they were primarily teachers who indicated that ideals were not impractical, that Utopia is not a transcendental process, but immanent in the heart of man; and above all, that without love no cause can be permanently successful.

To Spranger (56): "The meaning of the world, that is, of the whole, can therefore only be experienced by the religious attitude."

The definition of religious attitude used in this investigation, namely, the tendency to act in such a way as to attain certain values which are conceived of as residing in and proceeding from a power or powers which
When dramatized as personal are thought of as God or gods was based upon a definition by Symington (58). Symington's (58) study emphasized that this attitude toward values is the motive, sometimes unconscious, behind all the varied forms of religion.

With this definition of religious attitude established, studies were found which touched upon its application to teachers. Manske (38) found that teachers who believe it their duty to indoctrinate will tend to influence pupils to conform to their views, but that one sex is not more influential than the other. Katz and Allport (32) found that the outstanding influence accounting for the change in college students' religious convictions was "teaching in certain courses." The majority of the studies of religious attitudes of college students centered about topics such as the question of the existence and the nature of the deity, the role of religion in daily life, degree of religious observance, acceptance of miracles, belief in immortality, and the changes in attitude pertaining to them.

Katz and Allport (32) summarized these studies which might be construed as religious attitudes prior to 1931 as:

1. A study by J. H. Leuba in 1916 concerning the nature of the deity, the importance of belief in the deity, and the belief in immortality.
2. Another early study by Morse and Allen in 1913 was based mainly upon church-going.
3. Edwards, Altman, and Fisher studied the anonymous replies of college seniors regarding their religious habits and belief in God as a personal deity.
4. Bain tested the conclusions of Leuba's study in regard to belief in a personal deity.
5. Sinclair and Howells conducted experiments to determine the psychological and physiological factors which might be related to a religious disposition.
6. The most precise measurement of religious opinion was made by Thurstone and Chave in their study of attitudes for and against the church.

Many studies have been reported in the thirty-five years since this summation, but the studies were invariably aimed at targets other than teachers or pre-service teachers. Some were directed to certain aspects with which we are concerned such as age, Telford (61) and Teles (60); religious preference, Sullivan (57); preparation of teachers to answer religious questions, Sebaly (52); the changes in religious belief of college students, Isherwood (31); and attitudes of state school officers, superintendents of schools, presidents of colleges, and heads of departments of education, Dawson (16).

As has been noted before, many studies may be found involving formal religion instruction, but only two really pertinent studies, directed to the informal transmission of spiritual values by teachers in the public schools, were found.

One, reported by Boles (8), was made by a Committee of Moral and Spiritual Values in Education, appointed by Dr. H. M. McPherson, Superintendent of Schools of Napa, California. The Napa Study included teachers from elementary schools through college; 53 from elementary grades, 27 high school teachers, and 34 college teachers. Ninety-eight percent of
the teachers thought the school ought to transmit moral values and 93 percent thought that the school should transmit spiritual values. Ninety-five percent thought there should be greater emphasis on these values in the curriculum. Surprisingly, the greatest proportion of the 22 percent who thought that the school should not be responsible for transmitting these values were elementary teachers. Fifty percent of the teachers said that they made efforts to include moral and spiritual values, and 25 percent said this was a goal in all their work.

This study supported the hypothesis of the present investigation that many teachers in the public schools possess religious attitudes and will convey their attitudes to the students in an informal manner at all grade levels.

The study by Rogers and Burnes (48) must be given major recognition for the stimulation of the present research. The suggestion that students learn religious or nonreligious attitudes has probably been voiced before, but no other report indicated an attempt to measure these attitudes in a classroom situation. They (48) suggested that, contrary to the assumption of the average citizen, sectarian religious concepts are often taught in day-by-day informal situations which come up in the classroom incidental to current events or the coverage of formal subject matter. When they investigated the literature on the subject, they stated
Much to our surprise, we found very little indeed dealing with the teaching of religion in informal classroom situations. Apart from textbook analyses and some studies of religious practices during the holiday season, information simply does not exist.

In order to explore this area, Rogers and Burnes (198) created a "Classroom Problems Test." (Appendix F.) The test consisted of 15 hypothetical situations, each based upon a child's question. Ten of the items were decoys. It was administered to 133 in-service elementary school teachers. The decoy items apparently were effective as the teachers did not know that they were being tested on the teaching of religion. The answers were thereby assumed to be honest responses.

Test responses were categorized as wholly nonreligious, wholly religious, or indeterminate. Religious answers were defined as supportive of the concept of theism. Indeterminate responses were those which contained more than one idea or no answer. Negative or science-oriented responses or answers, with no reference to a supreme being, were classified as nonreligious.

The results indicated that over 52 percent of the responses could be classified as unqualified religious answers, and overwhelmingly in terms of an orthodox Christian theology. No relationship was indicated between religious affiliation and the degree of religiousness in the results.
Rogers and Burnes (48) concluded that while generalizations beyond the populations included in their investigations would be dangerous, it was apparent to them that religion is "taught" in many ways to some public school children. Bible reading, grace before lunch, baccalaureate services, invocations at school-sponsored events represent only one aspect of the problem. Their (48) data indicated that many teachers are making the children aware of the existence of God in a variety of teaching situations that have nothing to do with formal religious exercises.

E. Religious Attitude Test Construction

A wealth of information is available in psychophysical and psychological measurement of a great variety of objects and social stimuli, but this review was not designed to be an exhaustive study of all such measurement. It was confined to that research which measures religious attitudes.

A basic assumption by Thurstone (64) was that "it is just as legitimate to say that we are measuring attitudes as it is to say that we are measuring tables or men."

Thurstone (64), one of the outstanding authorities in the field, offered the following definitions of attitude and opinion:

Attitude is the sum total of man's inclinations, feelings, prejudices, bias, preconceived notions, ideas, fears, threats, and convictions about any specified topic.

Opinion is the verbal expression of attitude. Actually, then, an opinion is a symbol of an atti-
Attitude. Opinions may be used as the means for measuring attitudes.

Katz and Allport (32) and Remmers' (47) definitions of attitude were very similar in expressing the same predisposition to respond in a particular type of situation.

Remmers (47) reviewed types of scales in a very well-organized yet uncomplicated manner. He stated:

Attitude scales may be classified according to methods of constructing attitude-measuring devices such as the interview, a priori scales, psychophysical scales, sigma scales, master scales, rating scales, behavior scales, and analogous measurement of various sorts.

In brief, Remmers (47) described each of the more common methods. A priori scales are such things as case study and opinion polls. Psychophysical scales are exemplified by Thurstone's (63) work. Sigma scales are exemplified by Likert's (37) modification of the Thurstone methods in which he makes the doubtful assumption that attitudes are distributed normally and measures attitudes using standard deviation units. Master scales are exemplified by Remmer's (47) generalized method which is another modification of the Thurstone method. The essential difference is that the opinions which make up the scale are incomplete sentences without subject so that attitudes toward anyone of a large group or class of attitude objects can validly be measured on a single scale. Rosander (50), among others, developed the type referred to as behavior scales.
Katz and Allport (32) placed greater value on the a priori scale as they stated:

These attitudes are not projected onto a psychophysical continuum, but only related tellically in that they are successive acts of practical adjustment that an individual would be likely to perform if headed in his overt behavior thinking toward one of the termina of the scale.

Thurstone scales represent expressions of valence which reflect the underlying attitude, whereas Allport (1), in his work, attempts to have the statements represent the attitudes directly.

Edwards (18) described the two basic methods used in the construction of scales. One method involves the use of a judging group which judges the degree of favorableness or unfavorableness of each statement. Scale values of the statements in a psychological continuum are established based upon the judges' judgments. Attitude scores can then be found based upon the scale values established in advance. The second method is based upon direct responses of the subjects in which they agree or disagree with statements which involve an attitude in its context. An agreement with a statement indicates an obviously more favorable attitude than a disagreement does.

Variations upon these methods have been attempted by Likert (37), Edwards (18) and others, but the above methods remain as the basic approaches.
Bird (7) mentioned a method not described as such by most writers which indicates that the scales of Allport (1) and Thurstone (63) are modifications of an order-of-merit method. In its direct form, subjects rank statements from most favorable to least favorable thereby expressing their attitudes toward issues. An indirect form requires a group of experts to act as judges to arrange the statements in some order.

In the construction of attitude scales, the authorities gave certain restrictions and assumptions which are appropriate to religious attitude scale construction. A basic assumption is that there will be differences in the response of those with favorable attitudes and those with unfavorable attitudes. This was reviewed by Edwards (18) and analyzed by Rokeach (49).

Bird (7) mentioned two guiding principles:

1. That opinions belong to a definite cultural pattern (i.e., refer to a specific object or value).
2. That the attitudes under investigation should not be named.

Thurstone (64) stated that: "The first restriction on the problem of measuring attitudes is to specify an attitude variable and limit the measurement to that."

Edwards (18) cautioned that all statements about the psychological object or value which might be interpreted as factual should be eliminated.
A summarization of the criteria suggested by Wang (68), Thurstone and Chave (65), Bird (6), Edwards and Kilpatrick (19), and Krech, Crutchfield, and Ballachey (33) as the criteria for the selection of scale items follows:

1. An item must actually discriminate to stimulate different responses by people of different attitudes.
2. Items should discriminate as sharply as possible.
3. Use statements which refer to the present.
4. Use statements which are incapable of being interpreted as factual.
5. Use no double negatives.
6. Use statements which may be interpreted in one way only.
7. Use no statements which contain universal words, such as all or never, which might produce ambiguity.
8. Use only relevant statements.
9. Use no statements which contain possibilities of universal acceptance or rejection.
10. The language should be clear and simple.
11. Statements should be simple, complete sentences or questions.
12. Avoid the use of relative words such as barely.
13. The sentence or question should reflect only one meaning or connotation.
The minimal number of items for reliability must include considerations of efficiency and practicality in testing which sharply limit the total number of items in attitude scales.

Krech, Crutchfield, and Ballachey (33) referred to two types of items; an evaluative statement about the object, and a description of a specific action toward the object of the attitude in a specific situation.

Payne (44) was a valuable aid in determining the suitability of questions.

The five scaling methods, namely, Thurstone's method of equal appearing intervals, Likert's method of summated ratings, Bogardus' social-distance scale, Guttman's cumulative scaling, and Edwards and Kilpatrick's scale discrimination techniques were described simply and adequately by Krech, Crutchfield, and Ballachey (33).

Some recent critical evaluations of the methods of scale construction, by Wernimont (69) corroborated by Goodrich (24), showed that two methods considered to be the best methods left much to be desired statistically. None of the three methods evaluated by Wernimont (69), the method of equal appearing intervals, the method of differences, nor the method of paired comparisons, showed a consistency or accuracy sufficient to qualify any one method as the best method or even a statistically sound method. The results showed that the method of estimation of differences was the best of the three.
This is surprising because Thurstone's (64) method of equal-appearing intervals, and the method of paired-comparisons as explained by Edwards (18) are the most reputable of the scaling methods while the other method was one devised by Wernimont (69) for the specific purpose of testing the two well-known methods. The implications for this study were that, as Goodrich (24) summarized:

If, as our data seem to indicate, attitudes are metathetic rather than prothetic, it appears to make no more sense to talk about a neutral attitude than it does to talk about a neutral pitch. It would be implied, then, that a negative attitude is closer to zero than a positive one.

His results, which corroborated Wernimont's (69), were doubly interesting because the studies were based upon "attitudes toward the church" by Thurstone and Chave (65). Metathetic refers to continua having to do with position such as what kind and where, while prothetic refers to continua concerned with how much.

Krech, Crutchfield, and Ballachey (33) noted that although the neutral region of scales is a matter advocated by some authors, apparently it is arbitrarily assigned, or if established in some manner in the types of scales in use, is not satisfactorily defined.

The evidence produced doubt as to the importance of the neutral region as an individual's attitude is either pro or con, for or against the object or value.

Statistical techniques, analyses, and interpretations
were found in most understandable form in Edwards (18), Snedecor (54), and Wert (70).

Only two tests were found which measured what was desired in this research. These were Allport, Vernon, and Lindzey's (1) "Study of Values," and Rogers and Burnes' (Appendix F) "Classroom Problems Test."

The "Study of Values" is a test for the six dominant attitude clusters and is directed to individuals with some college experience. One of the attitude clusters tested is the religious attitude. The basis for the test was Spranger's (56) theory that the individuality of men and their personalities could be identified with their choice of values. The questions were designed to measure the magnitudinal relationships between the individual values proposed by Spranger (56). The scale was published in 1931 and revised in 1951 and again in 1960. The 1960 revision was used as a comparative instrument in this research. Green's thesis (25) gave an excellent explanation of the scale, and evaluations of the instrument were found in Buros (11) and Duffy (17).

Rogers and Burnes' "Classroom Problems Test" (Appendix F) was the only test discovered which was specifically designed to measure the religious attitudes of teachers in an informal classroom situation. This test includes ten decoy questions and five questions which may be answered in a religious manner. The questions are posed
as a series of hypothetical situations with which the student might be confronted in the classroom. The answers to the questions were written in essay form by the student. The test was scored by an arbitrary scale which involved the subjective judgment of the examiner in determining the valence of religiosity of the answers. No review or evaluation of the test was found.

The review of literature demonstrated a need for research in the area explored by this investigation. Rogers and Burnes (48) produced the only report which dealt with a method of obtaining research data on the religious attitude of teachers in relation to the informal classroom situations. The need for research in the whole area of the effect of the teacher upon the students was specifically noted by Briggs (10), Gage (22), Rose (51), and Rogers and Burnes (48).

The review of literature produced many interesting studies among which were certain salient facts. The great diversity of definitions and connotations of religion, especially evidenced by the forty definitions listed in the Appendix of Leuba's book (36), necessitated the development of a definition for use in the study. The review of the area of religion in the United States emphasized the impact of the Judaic-Christian tradition upon the people and the institutions of the United States. The limitations upon formal religious instruction and exercises in the public schools were the important facts brought out in the review of religion in the
American public schools.

The most striking fact brought out in the entire review of literature was the scarcity of information in relation to the effects of the teachers' attitudes, personality, and character upon the students of our schools. The fact that only one report was found which described a method for measuring the religious attitudes of teachers in informal classroom teaching situations emphasized the need for this study.
III. METHODS OF PROCEDURE

The purpose in this study was to determine the religious attitudes of pre-service teacher education majors at three institutions of higher learning in Iowa.

The delimitations of the study were the definition of religious attitudes; the limiting of students studied to pre-service teachers at Iowa State University of Science and Technology, Drake University, and William Penn College who were academically prepared to teach after graduation and would graduate during the first six months of 1965; and the limiting of the direction of the study to informal teaching situations in the public schools.

The methods of procedure were conducted within these guidelines to obtain the objectives of the study which are stated specifically within the context of the appropriate sub-chapters of this chapter.

A. Assumptions and Definitions

Realizing that direction and purpose are meaningless without foundation, a basic assumption was made that the Teacher Attitude Inventory, as the instrument constructed for this study was named, measures the religious attitudes of pre-service teacher education majors. Every precaution was made to assure the validity of the instrument in its construction, administration, scoring, and interpretation.
A secondary assumption was made that the Allport-Vernon-Lindzey "Study of Values" was the most appropriate instrument with which to compare the results of the Teacher Attitude Inventory.

Of equal importance to the establishment of a foundation for research is the necessity to clearly define certain terms. Diverse meanings and connotations are a barrier to communication and make a controversial issue even more controversial. The definitions listed below state the connotation or meaning of the terms as used in this paper.

1. **Attitudes** are predispositions to act in a given direction in response to a certain object or value. They include a cognitive component, an emotional component, and an action tendency.

2. **Concentration area** or **area of concentration** refers to the general subject field in which the pre-service teacher has been academically prepared to teach. It is applicable only to those pre-service teachers who plan to teach in grades 9 through 12. For this study, the areas correspond closely with the departmental organization in many junior and senior high schools and are as follows:
   a. Area 1 includes home economics.
   b. Area 2 includes art and music.
   c. Area 3 includes the language arts.
d. Area 4 includes physical education.

e. Area 5 includes science and mathematics, namely, biology, chemistry, earth science, general science, physics, algebra, and geometry.

f. Area 6 includes the social sciences, namely, American history, economics, geography government, sociology, and world history.

g. Area 7 includes agriculture, business, and industrial arts.

3. Grade Point Average, referred to as GPA, is the cumulative average of the student. As Iowa State University uses the quarter plan and the other schools use the semester plan, the averages were taken at the end of the quarter or semester just preceding the time the instruments were administered. It is derived by dividing the total number of quality points earned by the total number of credit hours accumulated. Grade points are earned in accordance with the following schedule:

A — Highest possible grade 4 points per credit hour
B — Above average 3 points per credit hour
C — Average 2 points per credit hour
D — Below average 1 point per credit hour
F — Failure 0 point per credit hour
Informal teaching situations are those situations which arise in the classroom due to current events or some other stimulus in which the teacher is presented with a question or action, usually impromptu and out of context, which requires some answer or response from the teacher. Such answers and responses involve instruction which is entirely separate and distinct from the formal, organized instruction and exercises provided for by legislation, policies, curricula, textbooks, and administrative planning.

Instrument is the term used to designate any device such as a scale, test, inventory, or opinionnaire which is designed to measure attitudes.

Opinions are the verbal expressions of attitudes (63).

Pre-service teacher education majors are college students who are completing their professional preparation to teach and will graduate in the current semester or quarter.

Pre-service teachers is the expression used in this report as an abbreviation for pre-service teacher education majors. Both designations were used in the report and are anonymous in meaning.
9. Religion is the attitude of an individual or group to those things conceived to be of highest value which involves a personal relationship with a power or powers referred to as God or gods.

10. Religious attitude is the tendency to act in such a way as to attain certain values which are conceived of as residing in and proceeding from a power or powers which when dramatized as personal are thought of as God or gods.

11. Study of Values refers to the title of the third edition of an instrument by Gordon W. Allport, Philip E. Vernon, and Gardner Lindzey used as a comparative measurement instrument in this study.

12. Teacher Attitude Inventory is the title of the instrument constructed for the research in this paper.

13. Values are inferred motivational constructs associated with perceived differences in goal directed behavior. They are indicated by the selection of choices which are based upon personal evaluation of the perceived alternatives (25). It is a general term including attitudes and opinions without differentiation as used in the Study of Values.
B. Selection of the Sample

The decision as to which institutions of higher learning to use in the study was based upon the premise that at least one Iowa institution which trained teachers in each of certain categories would be used. The categories were based upon the size and type of school. Based upon size, at least one large university (over 10,000 students), at least one middle-size university (4,000 students), and at least one small college (under 4,000 students) were desirable. Based on type, one state school, one independent school, and one sectarian school were desired.

Iowa State University and the University of Iowa are the only large universities in Iowa. Iowa State University was used because of the practicality of using the institution at which the study originated. It also met the requirement imposed at the outset of the study to use one state supported school. As an incidental point of interest, it is a university with a strong science and technology orientation which may produce some variation in results.

Drake University was selected because it is the only middle-size university in Iowa. It also met the requirement of an independent school.

It was desired that an equal number of institutions be used in each size category. As only one middle-size university exists in Iowa, only one institution in the other size categories was used.
William Penn College was used as the small college from among the several small sectarian colleges of Iowa. It is sponsored by the Society of Friends. A decision to use a Protestant college was arbitrary. It was felt to be more representative of Iowa which has a predominantly Protestant population. After a consideration of the number of pre-service teachers at the Protestant colleges in Iowa, William Penn College was selected.

The sample from each institution represented the total population of pre-service teachers who will graduate during the first six months of 1965. This decision was based upon the desire that the student's preparation to teach would be virtually completed at the time his attitudes were tested. His practice teaching experience would be completed or under way. No valid reason was found for not using the total population as they were all available. It was expected that a few might not participate in the study for personal reasons, but as the study is designed for exploration rather than for prediction purposes the larger the number of subjects the better.

C. Construction of the Instrument

A primary objective was to construct an attitude inventory which would measure the religious attitudes of pre-service teacher education majors at three institutions of higher learning in Iowa during the six months prior to
graduation. The inventory was to relate specifically to a classroom situation by presenting the questions as specific questions which might be asked by a student in a hypothetical classroom situation. A panel of teachers of various grade levels was used to assist in the construction of questions and answers. A specialist in test construction was consulted in regard to the construction, administration, scoring, and evaluation of the instrument.

The construction of the attitude inventory was begun after a careful review of related literature.

As Krech, Crutchfield, and Ballachey stated: (33)

The measurement of attitudes, like the measurement of all psychological determinants, is necessarily indirect. Attitudes can be measured on the basis of inferences drawn from the responses of the individual toward the object.

To safeguard this indirectness, it was decided to include a number of decoy questions which would draw the student's attention from a positive recognition of the nature of the attitude actually being measured.

The "Classroom Problems Test" by Rogers and Burnes (Appendix F) specifically applies to teachers' religious attitudes in an informal teaching situation. The idea of questions which might occur in a classroom situation became the approach used in the construction of the Teacher Attitude Inventory.

The "Classroom Problems Test" was scored by an arbitrary scale which involved the subjective judgment of the examiner.
in determining the valence of religiosity of the essay answers. It was decided that this subjectivity would not be used in the inventory being constructed.

This subjective judgment was greatly lessened by the use of a series of multiple choice answers to each question. One of the answers was to be of a religious nature. The religiosity of each of these answers was structured by reference to God, sin, creation, soul, the Commandments, or The Holy Bible (62). In the questions which included reference to God and creation (only one of each were included) the answer judged best by the author and panel was the answer which could be cited in The Holy Bible (62). One answer was also included in these two questions which was a nonreligious answer and one answer which was indeterminate but not citable in The Holy Bible. Only one question involved an actual knowledge of the Bible. This question involved the knowledge that plants were created "first" according to the Bible. It was felt that at least one answer in the inventory should involve a major emphasis on the cognitive component of the religious attitude. In those questions involving a religious answer, one choice (and only one of the choices) was structured to be a religious answer.

The criteria suggested (7), (19), (33), (65), for the selection of scale items, was followed.

The discriminating function and the sharpness of discrimination criteria were satisfied by applying one and only
one religious answer to any set of three choices.

The basis for three choices rather than more or less choices are based upon Rogers and Burnes (48) in which they arbitrarily assign an answer as wholly religious, wholly nonreligious, or indeterminate. The answers in the Teacher Attitude Inventory were directed toward this same differentiation.

For the most part, the questions used were questions which have actually been asked in the classroom. They were as current as practicable. There were no right or wrong answers although some of the "decoy" questions had an answer which was more closely related to the more accepted or more current theories of science. No double negatives were used. Universal terms were avoided. No questions used in the final version involved universal acceptance or rejection. The language was clear and simple. However, the various grade levels would probably use different words in framing the questions. The statements were complete sentences or statements. No relative words were used. Each sentence or question reflected only one meaning.

A criterion established by Krech, Crutchfield, and Ballachey (33) that the minimal number of items for reliability must include considerations of efficiency and practicality in testing which sharply limit the total number of items in attitude scales caused much deliberation and discussion.
Reliability cannot be established until after the test is constructed and administered. It was decided that the only two pertinent parts of this criterion during the construction of the inventory were considerations of efficiency and practicality. The Study of Values \(^1\) has 45 items and involves a 30 minute time allotment. As the intention of the study was to administer both the Teacher Attitude Inventory and the Study of Values, it was decided that the total time allotment could not exceed a 60 minute period. The tests were to be administered in some cases to students during a 50-60 minute period. This determined the total number of items to a great degree. Practicality, therefore, dictated the approximate total number of items.

The number of test questions and decoy questions was based upon the ratio between items in Rogers and Burnes test \(^2\). They used five religious questions and ten decoy questions so approximately one-third of the total were test questions.

In the Teacher Attitude Test a decision was made to limit the total number of items to 45 as in the Study of Values, but to go a little stronger than one-third for testable questions. The result was 16 religious items and 29 decoys.

Most of the decoy questions are science-oriented. This was due partly to the strong science orientation of the investigator and partly to a desire to place a strong emphasis in one area to make the decoy technique more functional.
Payne (44) was a valuable aid in determining the suitability of the questions.

After deciding upon questions to use, they were randomly assigned numbers from one to forty-five by drawing slips one by one from a hat. The original inventory was dittoed.

The questions which included an answer which reflects a religious attitude in the printed Teacher Attitude Inventory (Appendix C) are listed below by question number, answer letter, and with the key word or words which call for the opinion which reflects the religious attitude.

1. (b) God; created, sinful
2. (a) God, created
8. (a) created
9. (a) created
12. (c) sinful
17. (b) God
19. (a) God, created
27. (b) soul
28. (a) Plants (created first)
31. (c) reference to the Ten Commandments
32. (c) God, created
33. (b) promise to God
37. (c) God
41. (b) God
44. (b) God, Holy Ghost
All of these key words were taken from The Holy Bible (62) with strongest reference to the Book of Genesis and the Ten Commandments.

It was decided to use a separate answer sheet for the inventory during the study. Usable information was asked for on the top portion of the answer sheet so that a composite of all pertinent information would be contained on one sheet. Each of the sheets were numbered for key coding. (Appendix D).

The subject's name was asked for two reasons. If, for some reason, any information was omitted by the student, that information could be obtained from the appropriate school office. Also, as another instrument was to be administered, it would serve as a cross check.

The date was for reference only, as was the home address, age, marital status, and practice teaching information. The possibility of use in further studies or follow-up studies was one factor considered in including those items. The other factor was to ask for enough information to prevent the singling out of religious preference as a key item. The items of sex, teaching preparation, and grade point average were the pertinent information items.

The directions to the student were inserted on the answer page beneath the information portion. On the recommendation of the testing consultant, the directions specified that the student was to select a first choice, second choice, and third
choice of the three possible answers to each question. Evaluation was thereby imposed upon the student. He was asked to indicate his preference by making a 1, 2, and 3 in the appropriate columns on the answer sheet to indicate, respectively, his first choice, second choice, and third choice of the answer or action to each question.

The original 45 questions were given to a small class of Iowa State University seniors and a seminar of college and public school teachers. An item analysis of the responses showed that the responses to the inventory by the seniors indicated that two of the questions should be re-evaluated. The students showed an almost universal rejection of the religious answer as a first choice on these two questions. These two answers were reworded.

In the critical discussion of the inventory following the taking of the original inventory (Appendix B) by the seminar participants, four of the "decoy" questions were criticized as containing factual or "right or wrong" answers. These four questions were replaced with new questions and answers with no "right or wrong" overtones. The test was then printed under the title "Teacher Attitude Inventory" (Appendix C).

D. The Comparative Instrument

An instrument was desired which measured religious attitudes of people with college training or the equivalent and was
short enough in length to administer in addition to the Teacher Attitude Inventory to students during a limited time period.

A comparison of the results of the two instruments was to be made to determine whether the inventory intended specifically for teachers or pre-service teachers in a hypothetical classroom situation would produce results comparable to a general attitude inventory not specifically intended for teachers.

After a survey of the literature related to religious attitude tests revealed that few were available, it was decided to use a well known instrument which included religious attitudes as one of the six basic motives in personality. The Study of Values (1) was based upon Spranger's (56) "Types of Men" which defends the view that the personalities of men are best known through a study of their values or evaluative attitudes.

The test is valid and reliable (1) and (11) as Gage (22) states: "The Study of Values will continue to serve us well. ...and for research on a wide variety of psychological questions, the test is already very good."

It was recognized by this writer that the measures of the six values are not independent of one another, so the scores on the religious scale of the Study of Values was used only for comparison with the scores of the Teacher
Inventory. As this research poses a null hypothesis regarding differences by sex, the segregated scale for men and women on the Study of Values based upon the general population of all college students will be carefully scrutinized.

E. Administration of the Instruments

The students included in the study graduated at the end of the winter and spring quarters at Iowa State University, and at the end of the spring semester at Drake University and William Penn College. The inventories were administered to the students at all three schools during the quarter or semester in which they graduated. Times were arranged with the professors and deans of the various schools when it was most convenient during the months of January, February, March, April, and May, 1965.

At Iowa State University, arrangements were made to administer the inventories to the pre-service teachers who were preparing to teach in secondary schools during a class period which all such students attend in the quarter in which they graduate. The elementary pre-service teachers are prepared in the Department of Child Development. It was not possible for the writer to administer the inventories personally to all of these students. The professor in charge of student teaching activities administered the inventories at a weekly seminar. A copy of "Instructions to Administrator of Inventory" (Appendix E) was given to the professor after a
personal interview with the investigator as to procedures. It was urged that only the information on this sheet be relayed to the students before the testing. The Study of Values is self-administering. Omissions were to be discouraged if the question arose.

At Drake University the inventories were administered by the writer to all of the secondary pre-service teachers during a weekly seminar session. The elementary pre-service teachers met at a different time and the professor administered the inventories to them according to the same procedures as explained for Iowa State University.

At William Penn College, the author administered the inventory to both elementary and secondary pre-service teachers at a weekly seminar session. The students who had been student teachers the fall semester (and did not meet with the seminar group) were sent the inventories by mail with a short letter of explanation (Appendix G).

No pressure was used by the professors to force the pre-service teachers to take the inventories and it was expected that some would decline for personal reasons, but, as arrangements were made to administer the inventories during sessions at which attendance was expected, it was hoped that the number who declined would be small.

F. Scoring of the Instruments

The second objective of this investigation was to determine the tendency of pre-service teacher education majors to
select religious answers to certain hypothetical classroom questions.

The scoring of the Teacher Attitude Inventory was simple to devise and execute. A key was constructed with a window for each of the 16 answers which coincided with the question number and answer letter described above. By placing the key over the answer sheet to be scored, the choices of the student could be easily identified. A weight of 3 points was assigned to each first choice represented by a 1 in the window; a weight of 2 points was assigned to each 2 in the windows; and a weight of 1 point was assigned to each 3 in the windows of the key.

The procedure followed was: first, total the number of 1's, then multiply by 3. Total the number of 2's and multiply by 2. Total the number of 3's and multiply by 1. Finally, total the three products. The result was the score on the Teacher Attitude Inventory. This method recorded not only the score but the frequency of first, second, and third choices.

The Study of Values was scored by adding the numbers placed in the appropriate columns according to the Manual (1). The score for the religious scale was the only score taken.

To satisfy a third objective of this study, two types of profiles were established. One was based upon the percentage scores on the Teacher Attitude Inventory, and the
second was based upon the percentage of frequencies of
first choice of the religious answers in the Teacher
Attitude Inventory.

Two figures were constructed to graphically plot the
profiles. The first figure contained a profile for each of
the three schools and the total population based upon the
percentages of students who obtained each score on the
Teacher Attitude Inventory.

The second figure contained a profile for each school
and the total population based upon the percentage of fre­
quencies of first choices of the religious answers on the
Teacher Attitude Inventory.

G. Interpreting the Scores

The Study of Values Manual (1) describes the basis for
interpretation of it's religious scale.

Two bases for interpretation were used for the Teacher
Attitude Inventory. The first employed the neutral region
used by Allport, Vernon, and Lindzey (1) and described by
Krech (33). In the Study of Values, high and low scores are
those scores which fall outside the range listed as the
neutral region. This region includes the range of 50 percent
of all scores with a separate range given for women and for
men.

One of the hypotheses stated in this research was that
the results of the Teacher Attitude Inventory will indicate
no significant difference between the pre-service teacher education majors when categorized by sex. It was determined by simple arithmetical methods that the range scores, within the neutral region for both men and women on the Study of Values represented approximately 20 percent of the total range of scores. The range from high to outstandingly high scores and from low to outstandingly low scores was approximately 13 percent respectively.

When these percentages were applied to the range of possible scores on the Teacher Attitude Inventory, the ranges included both men and women's scores without differentiation. These ranges for interpretation of the Teacher Attitude Inventory are as follows:

- **Very high score** -- 40-48
- **High score** -- 36-39
- **Neutral region score** -- 29-35
- **Low score** -- 25-28
- **Very low score** -- 16-24

The second interpretation is based upon the assumption that there is no neutral attitude or opinion. An opinion expressing an attitude will always be pro or con, for or against the object or value. On the basis of this reasoning, an interpretive scale was devised to measure the tendency of the pre-service teachers to select religious answers as their first choice. Obviously, if the student selected all of the religious choices as first choice, his
score would be 48. If he selected all of the religious choices as his third choice, his score would be 16. The mid-point arithmetically is the score of 32. To obtain a score of 32, the student would have to split his choices in such a way that for each first choice he would select a third choice of a religious answer to the hypothetical classroom questions in the Teacher Attitude Inventory. The supposition is that the score of 32 would balance or slightly disfavor the religious answer so 33 was established as the score which is the breaking point for religious attitude. As the scores get progressively smaller the generalized attitude was interpreted as being less and less religious. As the scores get progressively larger the attitude was interpreted as being more and more religious.

A score of 41-48 constituted a highly religious attitude as more than 50 percent of the possible religious answers were selected as first choice with less than 25 percent selected as third choice.

A score of 33-40 constitutes a religious attitude because, regardless of the distribution of second choice, more first choices were recorded than third choices.

A score of 32 or below constitutes an attitude other than religious to the hypothetical classroom questions of the Teacher Attitude Inventory. It does not infer anything other than that the frequency of selection of the religious answer as first choice was equal to or less than the fre-
frequency of its selection as third choice.

To establish the lowest level of scale, the reverse of the highest level was evident. To obtain a score of 16-23, a student would have to rate the religious answer as third choice for more than 50 percent of the questions with less than 25 percent selected as first choice.

The interpretation of the Teacher Attitude Inventory, employing this method, was based on the following ranges of scores.

- Very high religious score -- 41-48
- High religious score -- 33-40
- Low religious score -- 24-32
- Very low religious score -- 16-23

H. Statistical Treatment

The fourth objective of this research was to determine differences, if any, in the results obtained when the pre-service teachers were classified by: (a) the college or university they were attending, (b) secondary and elementary, (c) sex, (d) religious affiliation, and (e) areas of concentration by those preparing to teach in secondary schools.

To test the significance of any differences which might occur, the following hypothesis was proposed:

Hypothesis 1: The results of the Teacher Attitude Inventory will indicate no significant difference between the pre-
service teacher education majors
when categorized by; (a) schools,
(b) secondary and elementary,
(c) sex, (d) religious preference,
sect, and (e) areas of concentration
in preparation for secondary school
 teaching.

The chi-square statistical treatment was used to compare
the frequency of choices of answers to the questions involv­
ing religious answers in the Teacher Attitude Inventory for
each of the categories in Hypothesis 1. Chi-square is com­
puted from the formula

\[ \chi^2 = \sum \frac{(Actual\ Frequency - Expected\ Frequency)^2}{Expected\ Frequency} \]

The degrees of freedom involved are \((R-1) (C-1)\). The
test was to be taken from an accumulative distribution of
chi-square table (70, p. 423) at 0.95 probability of greater
value.

Hypothesis 2: The scores obtained from the
Teacher Attitude Inventory
will positively correlate with
the grade point averages of the
pre-service teacher education
majors.
Hypothesis 3: The scores obtained from the Teacher Attitude Inventory will positively correlate with the scores on the religious scale of the Study of Values.

These two hypotheses were tested by the Pearson product-moment correlation technique (70) to determine the degree of association between the variables.
IV. FINDINGS

One objective of the study was to determine the differences, if any, in the results obtained from the Teacher Attitude Inventory when the pre-service teachers were classified by groups. The methods used to determine such differences were by: observation of the means of the scores and frequencies of choices of religious answers, testing for the differences between the frequencies of the choices of the religious answers by chi-square, and evaluation of the percentages of pre-service teachers in each score category by two types of interpretation.

Another objective of the study was to determine correlation between the scores of the Teacher Attitude Inventory and; (a) grade point averages and, (b) the scores of the pre-service teachers on the religious scale of the "Study of Values" by Allport, Vernon and Lindzey (1).

A. The Group Means

An examination of the means of the scores and frequencies of choices of religious answers on the Teacher Attitude Instrument revealed some differences in Tables 1 through 6.

Mean frequencies are means of the number of times pre-service teachers selected the religious answer the first, second, and third choice on the Teacher Attitude Inventory. The mean scores refer to the scores obtained by the pre-service teachers on the Teacher Attitude Inventory.
Table 1. Summary of the results of the Teacher Attitude Inventory for the pre-service teachers by schools and by totals

<table>
<thead>
<tr>
<th>School</th>
<th>Number</th>
<th>Mean Frequencies</th>
<th>Range</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>First choice</td>
<td>Second choice</td>
<td>Third choice</td>
</tr>
<tr>
<td>I.S.U.</td>
<td>141</td>
<td>4.99</td>
<td>5.77</td>
<td>5.24</td>
</tr>
<tr>
<td>Drake</td>
<td>137</td>
<td>5.82</td>
<td>5.82</td>
<td>4.36</td>
</tr>
<tr>
<td>Penn</td>
<td>57</td>
<td>6.40</td>
<td>5.80</td>
<td>3.80</td>
</tr>
<tr>
<td>Totals</td>
<td>335</td>
<td>5.57</td>
<td>5.79</td>
<td>4.64</td>
</tr>
</tbody>
</table>

The mean score and mean frequency of first choice of the religious answers of the I.S.U. students were lower than the mean scores and mean frequencies of first choices for the total number of students involved in the study, the Drake students, and the Penn students, respectively. The range also indicated this tendency toward a less religious response to the religious items on the Teacher Attitude Inventory.
Table 2. Summary of the results of the Teacher Attitude Inventory for the pre-service teachers by sex

<table>
<thead>
<tr>
<th>Sex</th>
<th>School</th>
<th>Number</th>
<th>First choice</th>
<th>Second choice</th>
<th>Third choice</th>
<th>Mean score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women</td>
<td>I.S.U.</td>
<td>112</td>
<td>4.84</td>
<td>5.94</td>
<td>5.22</td>
<td>31.59</td>
</tr>
<tr>
<td>Drake</td>
<td></td>
<td>78</td>
<td>5.85</td>
<td>5.92</td>
<td>4.23</td>
<td>33.60</td>
</tr>
<tr>
<td>Penn</td>
<td></td>
<td>23</td>
<td>6.70</td>
<td>5.90</td>
<td>3.40</td>
<td>35.30</td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td>213</td>
<td>5.41</td>
<td>5.93</td>
<td>4.66</td>
<td>32.72</td>
</tr>
<tr>
<td>Men</td>
<td>I.S.U.</td>
<td>29</td>
<td>5.58</td>
<td>5.10</td>
<td>5.32</td>
<td>31.52</td>
</tr>
<tr>
<td>Drake</td>
<td></td>
<td>59</td>
<td>5.78</td>
<td>5.68</td>
<td>4.54</td>
<td>33.27</td>
</tr>
<tr>
<td>Penn</td>
<td></td>
<td>34</td>
<td>6.21</td>
<td>5.76</td>
<td>4.03</td>
<td>34.12</td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td>122</td>
<td>5.90</td>
<td>5.57</td>
<td>4.53</td>
<td>33.09</td>
</tr>
</tbody>
</table>

When classified by sex, the mean frequencies of first, second, and third choices of religious answers and the mean scores were relatively alike, although the means for I.S.U. women were different from the other groups.
Table 3. Summary of the results of the Teacher Attitude Inventory for the pre-service teachers by grade level

<table>
<thead>
<tr>
<th>Grade level</th>
<th>School</th>
<th>Number</th>
<th>First choice</th>
<th>Second choice</th>
<th>Third choice</th>
<th>Mean score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary</td>
<td>I.S.U.</td>
<td>56</td>
<td>4.60</td>
<td>6.16</td>
<td>5.24</td>
<td>31.34</td>
</tr>
<tr>
<td></td>
<td>Drake</td>
<td>34</td>
<td>5.26</td>
<td>6.80</td>
<td>3.94</td>
<td>33.30</td>
</tr>
<tr>
<td></td>
<td>Penn</td>
<td>15</td>
<td>5.80</td>
<td>6.07</td>
<td>4.13</td>
<td>33.67</td>
</tr>
<tr>
<td></td>
<td>Totals</td>
<td>105</td>
<td>5.00</td>
<td>6.35</td>
<td>4.65</td>
<td>32.30</td>
</tr>
<tr>
<td>Secondary</td>
<td>I.S.U.</td>
<td>85</td>
<td>5.26</td>
<td>5.50</td>
<td>5.24</td>
<td>31.73</td>
</tr>
<tr>
<td></td>
<td>Drake</td>
<td>103</td>
<td>6.00</td>
<td>5.50</td>
<td>4.50</td>
<td>33.50</td>
</tr>
<tr>
<td></td>
<td>Penn</td>
<td>42</td>
<td>6.62</td>
<td>5.74</td>
<td>3.64</td>
<td>34.93</td>
</tr>
<tr>
<td></td>
<td>Totals</td>
<td>230</td>
<td>5.84</td>
<td>5.52</td>
<td>4.62</td>
<td>33.11</td>
</tr>
</tbody>
</table>

The consistent superiority of mean scores and mean frequencies of first choices by the pre-service teachers prepared to teach in secondary schools indicated that they selected religious answers more frequently at all three of the schools.
Table 4. Summary of the results of the Teacher Attitude Inventory for the pre-service teachers prepared to teach in secondary schools by area of concentration

<table>
<thead>
<tr>
<th>Area</th>
<th>Number</th>
<th>First choice</th>
<th>Second choice</th>
<th>Third choice</th>
<th>Mean score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home economics</td>
<td>41</td>
<td>5.32</td>
<td>5.68</td>
<td>5.00</td>
<td>32.32</td>
</tr>
<tr>
<td>Art and music</td>
<td>31</td>
<td>5.65</td>
<td>5.65</td>
<td>4.70</td>
<td>33.00</td>
</tr>
<tr>
<td>Language arts</td>
<td>39</td>
<td>5.54</td>
<td>5.41</td>
<td>5.05</td>
<td>32.49</td>
</tr>
<tr>
<td>Physical education</td>
<td>33</td>
<td>6.73</td>
<td>5.21</td>
<td>4.03</td>
<td>34.58</td>
</tr>
<tr>
<td>Science and mathematics</td>
<td>24</td>
<td>5.67</td>
<td>5.58</td>
<td>4.75</td>
<td>32.67</td>
</tr>
<tr>
<td>Social studies</td>
<td>37</td>
<td>5.62</td>
<td>5.76</td>
<td>4.62</td>
<td>33.00</td>
</tr>
<tr>
<td>Vocational (agriculture,</td>
<td>25</td>
<td>6.75</td>
<td>5.40</td>
<td>3.85</td>
<td>34.50</td>
</tr>
<tr>
<td>industrial arts, and business)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>230</td>
<td>5.84</td>
<td>5.54</td>
<td>4.62</td>
<td>33.11</td>
</tr>
</tbody>
</table>

A score of 32 constitutes the mid-point or point at which the student has selected religious answers 50 percent of the time or less. In Table 4, all of the mean scores reflect an attitude which is religious. All of the secondary area mean scores are above 32 with two areas, physical education and vocational, scoring substantially higher than the other areas.

When classified by secondary area of concentration, the mean frequencies of first, second, and third choices of the religious answers were similar, although the frequencies of first and third choices by the areas of vocational and physical education were different from other groups.
Table 5. Summary of the results of the Teacher Attitude Inventory for the pre-service teachers by religious preference

<table>
<thead>
<tr>
<th>Religion</th>
<th>Number</th>
<th>Mean Frequencies</th>
<th></th>
<th></th>
<th></th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>First choice</td>
<td>Second</td>
<td>Third choice</td>
<td>score</td>
<td></td>
</tr>
<tr>
<td>Catholic</td>
<td>41</td>
<td>6.00</td>
<td>6.00</td>
<td>4.00</td>
<td>33.90</td>
<td></td>
</tr>
<tr>
<td>Jew</td>
<td>3</td>
<td>4.67</td>
<td>5.33</td>
<td>6.00</td>
<td>30.67</td>
<td></td>
</tr>
<tr>
<td>Protestant</td>
<td>271</td>
<td>5.54</td>
<td>5.84</td>
<td>4.62</td>
<td>32.84</td>
<td></td>
</tr>
<tr>
<td>Nonea</td>
<td>20</td>
<td>5.30</td>
<td>4.90</td>
<td>5.80</td>
<td>31.35</td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>335</td>
<td>5.57</td>
<td>5.80</td>
<td>4.64</td>
<td>32.86</td>
<td></td>
</tr>
</tbody>
</table>

aNone includes those who did not state a religious preference.

Choice frequencies by religious preference were outlined in Table 5. Data about the three Jewish students, of Table 5, cannot yield significant results. However, these were included because they affect the total means slightly. The "None" group yielded interesting results although, again, small numbers were involved. Although the "None" students indicated no religious preference, the mean frequency of first choice of religious answers was almost the same as for the total group mean frequency of first choices.

The Catholic mean score and mean frequency of first choices of the religious answers were higher than those for Protestants among the pre-service teachers.

Because of the large majority of Protestants included in the study who stated their preference as a specific sect, Table 6 was constructed to present the results by Protestant sect.
Table 6. Summary of the results of the Teacher Attitude Inventory for the pre-service teachers who designated a specific Protestant sect as their religious preference

<table>
<thead>
<tr>
<th>Protestant sect</th>
<th>Number</th>
<th>First choice</th>
<th>Second choice</th>
<th>Third choice</th>
<th>Mean score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baptist</td>
<td>12</td>
<td>6.08</td>
<td>5.75</td>
<td>4.17</td>
<td>33.92</td>
</tr>
<tr>
<td>Christian</td>
<td>18</td>
<td>6.11</td>
<td>5.56</td>
<td>4.33</td>
<td>33.80</td>
</tr>
<tr>
<td>Congregational</td>
<td>9</td>
<td>6.44</td>
<td>5.22</td>
<td>4.34</td>
<td>34.11</td>
</tr>
<tr>
<td>Episcopal</td>
<td>10</td>
<td>4.10</td>
<td>6.10</td>
<td>6.00</td>
<td>30.10</td>
</tr>
<tr>
<td>Friends</td>
<td>8</td>
<td>6.63</td>
<td>6.63</td>
<td>2.74</td>
<td>35.88</td>
</tr>
<tr>
<td>Lutheran</td>
<td>50</td>
<td>6.08</td>
<td>6.08</td>
<td>3.64</td>
<td>34.28</td>
</tr>
<tr>
<td>Methodist</td>
<td>69</td>
<td>5.39</td>
<td>6.13</td>
<td>4.48</td>
<td>32.68</td>
</tr>
<tr>
<td>Presbyterian</td>
<td>35</td>
<td>5.00</td>
<td>5.83</td>
<td>5.17</td>
<td>31.83</td>
</tr>
<tr>
<td>Other</td>
<td>10</td>
<td>6.30</td>
<td>4.20</td>
<td>5.50</td>
<td>32.80</td>
</tr>
<tr>
<td>Totals</td>
<td>221</td>
<td>5.65</td>
<td>5.90</td>
<td>4.45</td>
<td>33.13</td>
</tr>
</tbody>
</table>

\(^a\) Christian refers to the stated preference as Christian or Disciples of Christ.

\(^b\) Friends refers to the stated preference as Friends, Society of Friends, or Quaker.

\(^c\) Other includes one Christian Reformed, one Jehovah Witness, one Christ Our Savior, one Christian Science, one Gospel Chapel, two Reformed Church of the Latter Day Saints, and three Unitarians.

The "Other" category included those religious sects which were selected by three students or less. Among the sects, excluding "Other", the mean scores indicated the following ranking from highest to lowest; Friends, Congregational, Baptist, Christian, Methodist, Presbyterian, and Episcopal.

When ranked by mean frequency of first choices the order
from highest to lowest was; Friends, Congregational, Christian, Baptist and Lutheran, Methodist, Presbyterian and Episcopal.

The Friends' mean score was higher than the second highest mean score. The Episcopalians' means were lower than the second lowest means. No inferences were implied for extensions of these results to any greater population.

The mean frequency of third choices of religious answers for Episcopalians' was greater than any other sect while the mean frequency of the third choices for the Friends' was much lower than that of any other sect.

B. Chi-square

The chi-square technique was employed to determine whether significant differences were present among the frequencies of first, second, and third choices of the religious answers by the pre-service teachers when classified by groups. This technique tested whether the distribution of attitude responses of the students differed from frequencies expected on the basis of the null hypothesis.

The chi-square test was used at the five percent level and the one percent level of significance to test the null hypothesis for each chi-square contingency table.

A significant difference refers to a value which exceeds the tabulated value (70, p. 423), with appropriate degrees of freedom at the five percent level of significance. A highly significant difference refers to a value which exceeds the
tabulated value at the one percent level with the appropriate degrees of freedom.

The degrees of freedom were the product of the number of columns, in the contingency table, minus one times the number of rows minus one, \((C-1)(R-1)\).

**Differences among schools**

The null hypothesis assumed that each of the three choices of answers to the religious questions is equally probable if the members of the schools have no real preference.

Table 7. Chi-square contingency table for frequency of choices of the religious answers to the Teacher Attitude Inventory by schools

<table>
<thead>
<tr>
<th>School</th>
<th>First choice</th>
<th>Second choice</th>
<th>Third choice</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(A^a)</td>
<td>(A^b)</td>
<td>(A^a)</td>
<td>(A^b)</td>
</tr>
<tr>
<td>I.S.U.</td>
<td>704</td>
<td>785</td>
<td>813</td>
<td>817</td>
</tr>
<tr>
<td>Drake</td>
<td>797</td>
<td>763</td>
<td>797</td>
<td>763</td>
</tr>
<tr>
<td>Penn</td>
<td>365</td>
<td>318</td>
<td>332</td>
<td>331</td>
</tr>
<tr>
<td>Totals</td>
<td>1866</td>
<td>1942</td>
<td>1554</td>
<td>5362</td>
</tr>
</tbody>
</table>

\(^a\)Actual frequency.

\(^b\)Expected frequency.

The calculated chi-square value was 45.042. This value, with four degrees of freedom, was larger than both the five percent value, 9.488, and the one percent value, 13.277, given
in the chi-square table (70, p. 423). This result indicated that the tendency to respond to the religious question is significantly different among the schools investigated in this research. It seemed likely, therefore, that school attended and preference are related. The null hypothesis was rejected.

Differences by sex

The null hypothesis assumed that each of the three choices of answers to the religious questions is equally probable if the male and female pre-service teachers have no real preference.

Table 8. Chi-square contingency table for frequency of choices of the religious answers to the Teacher Attitude Inventory by sex

<table>
<thead>
<tr>
<th>Sex</th>
<th>First choice A&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Second choice A&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Third choice A&lt;sup&gt;c&lt;/sup&gt;</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>E&lt;sup&gt;d&lt;/sup&gt;</td>
<td>E&lt;sup&gt;e&lt;/sup&gt;</td>
<td>E&lt;sup&gt;f&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>1152</td>
<td>1186</td>
<td>1263</td>
<td>1234</td>
</tr>
<tr>
<td>Male</td>
<td>734</td>
<td>680</td>
<td>679</td>
<td>708</td>
</tr>
<tr>
<td>Totals</td>
<td>1866</td>
<td>1942</td>
<td>1554</td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup>Actual frequency.

<sup>b</sup>Expected frequency.

The calculated chi-square value was 4.614. This value with two degrees of freedom was smaller than the five percent
value, 5.991, given in the chi-square table (70, p. 423).
Since the five percent level had not been reached, evidence was insufficient to indicate any significant difference in the tendency of males and females to respond to the religious questions in the Teacher Attitude Inventory. The null hypothesis was accepted.

**Elementary secondary differences**

The null hypothesis assumed that each of the three choices of answers to the religious questions is equally probable if the elementary and secondary pre-service teachers have no real preference.

**Table 9. Chi-square contingency table for frequency of choices of the religious answers to the Teacher Attitude Inventory by grade level**

<table>
<thead>
<tr>
<th>Grade level</th>
<th>First choice</th>
<th></th>
<th>Second choice</th>
<th></th>
<th>Third choice</th>
<th></th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A&lt;sup&gt;a&lt;/sup&gt;</td>
<td>E&lt;sup&gt;b&lt;/sup&gt;</td>
<td>A</td>
<td>E</td>
<td>A</td>
<td>E</td>
<td></td>
</tr>
<tr>
<td>Elementary</td>
<td>523</td>
<td>585</td>
<td>667</td>
<td>608</td>
<td>490</td>
<td>487</td>
<td>1680</td>
</tr>
<tr>
<td>Secondary</td>
<td>1343</td>
<td>1281</td>
<td>1275</td>
<td>1334</td>
<td>1064</td>
<td>1067</td>
<td>3682</td>
</tr>
<tr>
<td>Totals</td>
<td>1866</td>
<td>1942</td>
<td>1554</td>
<td></td>
<td></td>
<td></td>
<td>5362</td>
</tr>
</tbody>
</table>

<sup>a</sup>Actual frequency.

<sup>b</sup>Expected frequency.

The calculated chi-square value was 17.933. This value, with two degrees of freedom, was larger than both the five
percent value, 5.991, and the one percent value, 9.210 given in the chi-square table (70, p. 423). This result indicated a significant difference of preference for choices of answers to the religious questions between the elementary and secondary pre-service teachers. The null hypothesis was rejected.

**Differences by secondary areas**

The null hypothesis assumed that each of the three choices of answers to the religious questions is equally probable if the pre-service teachers in the various areas of secondary education have no real preference.

The calculated chi-square value for Table 10 was 20.757. This value with twelve degrees of freedom was slightly smaller than the five percent value of 21.026 given in the chi-square table (70, p. 423). Since the five percent level had not been reached, the evidence in this instance was insufficient to indicate any significant difference in the tendency to respond to the religious questions between the pre-service teachers prepared to teach in the various areas of secondary education. The null hypothesis was accepted.

**Differences by Religious Preference**

The null hypothesis assumed that each of the three choices of the answers to the religious questions is equally probable if the Catholic, Jew, Protestant, and "None" groups of pre-service teachers have no real preference.
Table 10. Chi-square contingency table for frequency of choices of the religious answers to the Teacher Attitude Inventory by secondary areas of concentration

<table>
<thead>
<tr>
<th>Area</th>
<th>First choice</th>
<th></th>
<th>Second choice</th>
<th></th>
<th>Third choice</th>
<th></th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A&lt;sup&gt;a&lt;/sup&gt;</td>
<td>B&lt;sup&gt;b&lt;/sup&gt;</td>
<td>A&lt;sup&gt;a&lt;/sup&gt;</td>
<td>B&lt;sup&gt;b&lt;/sup&gt;</td>
<td>A&lt;sup&gt;a&lt;/sup&gt;</td>
<td>B&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>Home economics</td>
<td>218</td>
<td>239</td>
<td>233</td>
<td>227</td>
<td>205</td>
<td>190</td>
<td>656</td>
</tr>
<tr>
<td>Art and music</td>
<td>175</td>
<td>181</td>
<td>176</td>
<td>172</td>
<td>145</td>
<td>143</td>
<td>496</td>
</tr>
<tr>
<td>Language arts</td>
<td>216</td>
<td>228</td>
<td>211</td>
<td>216</td>
<td>197</td>
<td>180</td>
<td>624</td>
</tr>
<tr>
<td>Physical education</td>
<td>222</td>
<td>193</td>
<td>173</td>
<td>184</td>
<td>135</td>
<td>153</td>
<td>530</td>
</tr>
<tr>
<td>Science and mathematics</td>
<td>136</td>
<td>140</td>
<td>134</td>
<td>133</td>
<td>114</td>
<td>111</td>
<td>384</td>
</tr>
<tr>
<td>Social studies</td>
<td>208</td>
<td>216</td>
<td>213</td>
<td>205</td>
<td>171</td>
<td>171</td>
<td>592</td>
</tr>
<tr>
<td>Vocational (agriculture, industrial arts, and business)</td>
<td>168</td>
<td>146</td>
<td>135</td>
<td>138</td>
<td>97</td>
<td>116</td>
<td>400</td>
</tr>
<tr>
<td>Totals</td>
<td>1343</td>
<td>1275</td>
<td>1064</td>
<td></td>
<td></td>
<td></td>
<td>3682</td>
</tr>
</tbody>
</table>

<sup>a</sup>Actual frequency.

<sup>b</sup>Expected frequency.
The calculated chi-square value, in Table 11, was 15.466. This value, with six degrees of freedom was larger than the five percent value, 12.592, given in the chi-square table (70, p. 423), but smaller than the one percent value, 16.812. The evidence indicated a significant difference in preference of the choices of answers by the Catholic, Jew, Protestant, and "None" pre-service teachers included in this study. The null hypothesis was rejected.

Table 11. Chi-square contingency table for frequency of choices of the religious answers to the Teacher Attitude Inventory by religious preference

<table>
<thead>
<tr>
<th>Religion</th>
<th>First choice</th>
<th>Second choice</th>
<th>Third choice</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A&lt;sup&gt;a&lt;/sup&gt;</td>
<td>E&lt;sup&gt;b&lt;/sup&gt;</td>
<td>A</td>
<td>E</td>
</tr>
<tr>
<td>None&lt;sup&gt;c&lt;/sup&gt;</td>
<td>106</td>
<td>111</td>
<td>98</td>
<td>116</td>
</tr>
<tr>
<td>Catholic</td>
<td>245</td>
<td>228</td>
<td>246</td>
<td>238</td>
</tr>
<tr>
<td>Jew</td>
<td>14</td>
<td>17</td>
<td>16</td>
<td>17</td>
</tr>
<tr>
<td>Protestant</td>
<td>1501</td>
<td>1510</td>
<td>1582</td>
<td>1571</td>
</tr>
<tr>
<td>Totals</td>
<td>1866</td>
<td>1942</td>
<td>1554</td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup>Actual frequency.

<sup>b</sup>Expected frequency.

<sup>c</sup>None refers to those who did not state a preference.

Differences by Protestant sect

The null hypothesis assumed that each of the three choices of the answers to the religious questions is equally probable.
if the members of the Protestant sects have no real preference.

The calculated chi-square, in Table 12, was 48.777. This value with 16 degrees of freedom was larger than both the five percent value, 26.296, and the one percent value, 32.000, given in the chi-square table (70, p. 423). This additional evidence about religious preference indicated a highly significant difference between Protestant sects. The null hypothesis was rejected.

Summary of chi-square

To summarize the results of testing the frequency of choices of the religious answers to the Teacher Attitude Inventory by the chi-square statistical technique, the evidence indicated that there was; (a) highly significant difference by schools, by grade level, and by Protestant sects; (b) a significant difference between religions; but, (c) no significant difference between men and women, or between the secondary areas of concentration.

C. Interpretation of the Scores

The Teacher Attitude Inventory scores were interpreted in two ways. The first employed the neutral region used by Allport, Vernon, and Lindzey (1). As no assumption was made that men and women differ in the scores they will obtain on the Teacher Attitude Inventory, separate scales for men and women were not employed. Instead, one interpretation scale was established which included both sexes. The second method
Table 12. Chi-square contingency table for frequency of choices of the religious answers to the Teacher Attitude Inventory by stated preference for Protestant sect

<table>
<thead>
<tr>
<th>Sect</th>
<th>First choice</th>
<th>Second choice</th>
<th>Third choice</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Actual</td>
<td>expected</td>
<td>Actual</td>
<td>expected</td>
</tr>
<tr>
<td></td>
<td>Actual</td>
<td>expected</td>
<td>Actual</td>
<td>expected</td>
</tr>
<tr>
<td></td>
<td>Actual</td>
<td>expected</td>
<td>Actual</td>
<td>expected</td>
</tr>
<tr>
<td></td>
<td>Actual</td>
<td>expected</td>
<td>Actual</td>
<td>expected</td>
</tr>
<tr>
<td>Baptist</td>
<td>73</td>
<td>68</td>
<td>69</td>
<td>71</td>
</tr>
<tr>
<td>Christian</td>
<td>110</td>
<td>102</td>
<td>100</td>
<td>106</td>
</tr>
<tr>
<td>Congregational</td>
<td>58</td>
<td>51</td>
<td>47</td>
<td>53</td>
</tr>
<tr>
<td>Episcopal</td>
<td>41</td>
<td>57</td>
<td>61</td>
<td>60</td>
</tr>
<tr>
<td>Friends</td>
<td>53</td>
<td>45</td>
<td>53</td>
<td>47</td>
</tr>
<tr>
<td>Lutheran</td>
<td>304</td>
<td>282</td>
<td>304</td>
<td>295</td>
</tr>
<tr>
<td>Methodist</td>
<td>372</td>
<td>390</td>
<td>423</td>
<td>407</td>
</tr>
<tr>
<td>Presbyterian</td>
<td>175</td>
<td>198</td>
<td>204</td>
<td>206</td>
</tr>
<tr>
<td>Other</td>
<td>63</td>
<td>56</td>
<td>42</td>
<td>59</td>
</tr>
<tr>
<td>Totals</td>
<td>1249</td>
<td>1303</td>
<td>986</td>
<td></td>
</tr>
</tbody>
</table>

*Other includes one Christian Reformed, one Jehovah Witness, one Christ Our Savior, one Christian Science, one Gospel Chapel, two Reformed Church of the Latter Day Saints, and three Unitarians.
for interpretation was an arbitrary assignment of the scores based upon the theory of the writer of this investigation that there is no neutral attitude. In this method of interpretation, an analysis of the distribution of first, second, and third choices of the religious answers to the 16 hypothetical classroom questions involving a religious answer was used as the basis for establishing the interpretation scale.

The combined percentages from the "High" and "Very high" categories, in both methods of interpretation, were representative of a high degree of positive valence. This was interpreted as a religious attitude.

Neutral region method

In Tables 13 through 18 the number and percentage of pre-service teachers whose scores fell in each of the interpretation categories were presented. These categories included the neutral region. Valence categories of scores of the pre-service teachers classified by schools are presented in Table 13.

Only 20.5 percent of the Iowa State University pre-service teachers scored higher than the neutral region compared with 36.8 percent of the Drake pre-service teachers and 45.6 of the Penn pre-service teachers. Both Iowa State University and Drake University students' percentage in the neutral region of 51.1 indicated a central tendency, but the percentage of Penn College students' definitely did not. The Iowa State University's percentages and the total percentage approached a normal dis-
Table 13. Valence categories of scores on the Teacher Attitude Inventory by schools

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>I.S.U.</td>
<td>12</td>
<td>8.5</td>
<td>17</td>
<td>12.0</td>
<td>72</td>
</tr>
<tr>
<td>Drake</td>
<td>13</td>
<td>9.5</td>
<td>36</td>
<td>26.3</td>
<td>70</td>
</tr>
<tr>
<td>Penn</td>
<td>7</td>
<td>12.3</td>
<td>19</td>
<td>33.3</td>
<td>23</td>
</tr>
<tr>
<td>Totals</td>
<td>32</td>
<td>9.6</td>
<td>72</td>
<td>21.5</td>
<td>165</td>
</tr>
</tbody>
</table>
tribution, but the other schools' percentages were skewed in the direction of higher religious scores.

Data contained in Table 14 tended to indicate that women do not have higher religious attitudes than men. The percentage of men scoring above the neutral region was 39.2 compared with the percentage of 27.4 for the women. At each of the three schools, the percentage of men who scored above the neutral region was substantially higher than that for women as evidenced by the table.

The differences between the elementary and secondary responses to the Teacher Attitude Inventory were very clearly illustrated in Table 15. The percentage of secondary pre-service teachers who scored higher than the neutral region was 53.4 compared to the percentage of 18.1 for the elementary pre-service teachers. The elementary percentages for scores below the neutral region were surprisingly high. The percentage of Penn pre-service teachers who scored below the neutral region was 26.6. This was surprising because the William Penn students showed very high results in mean frequencies of first choice of religious answers and mean scores. The contrast between the Penn elementary and secondary pre-service teachers was very great. Categories above the neutral region contained 52.4 percent of the secondary; only 26.7 percent of the elementary.

Score categories, classified by the secondary area of teaching for which the students are prepared, were outlined in
Table 14. Valence categories of scores on the Teacher Attitude Inventory by sex and by sex within schools

<table>
<thead>
<tr>
<th>School</th>
<th>Score categories</th>
<th>Sex</th>
<th>No.</th>
<th>%</th>
<th>No.</th>
<th>%</th>
<th>No.</th>
<th>%</th>
<th>No.</th>
<th>%</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>40-48</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>25-28</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Very high</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Low</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>High</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Very low</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>No.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>No.</td>
<td></td>
<td></td>
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<tr>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I.S.U.</td>
<td>9</td>
<td>8.0</td>
<td>11</td>
<td>10.0</td>
<td>61</td>
<td>54.5</td>
<td>25</td>
<td>22.3</td>
<td>6</td>
<td>5.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drake</td>
<td>7</td>
<td>9.0</td>
<td>19</td>
<td>23.1</td>
<td>44</td>
<td>56.4</td>
<td>5</td>
<td>6.4</td>
<td>3</td>
<td>5.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Penn</td>
<td>3</td>
<td>13.0</td>
<td>7</td>
<td>30.4</td>
<td>10</td>
<td>43.5</td>
<td>0</td>
<td>0.0</td>
<td>3</td>
<td>13.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>19</td>
<td>9.9</td>
<td>37</td>
<td>17.5</td>
<td>115</td>
<td>54.0</td>
<td>30</td>
<td>14.1</td>
<td>12</td>
<td>23.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I.S.U.</td>
<td>3</td>
<td>10.3</td>
<td>6</td>
<td>20.7</td>
<td>11</td>
<td>38.0</td>
<td>3</td>
<td>10.3</td>
<td>6</td>
<td>20.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drake</td>
<td>6</td>
<td>10.2</td>
<td>17</td>
<td>28.8</td>
<td>26</td>
<td>44.1</td>
<td>6</td>
<td>10.2</td>
<td>4</td>
<td>6.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Penn</td>
<td>4</td>
<td>11.8</td>
<td>12</td>
<td>35.3</td>
<td>13</td>
<td>38.2</td>
<td>3</td>
<td>8.8</td>
<td>2</td>
<td>5.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>13</td>
<td>10.6</td>
<td>35</td>
<td>28.6</td>
<td>50</td>
<td>41.0</td>
<td>12</td>
<td>9.9</td>
<td>12</td>
<td>9.9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 15. Valence categories of scores on the Teacher Attitude Inventory by grade level and by grade level within schools

<table>
<thead>
<tr>
<th>Grade level</th>
<th>Score categories</th>
<th>40-48</th>
<th>36-39</th>
<th>29-35</th>
<th>25-28</th>
<th>16-24</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Very high</td>
<td>High</td>
<td>Neutral</td>
<td>Low</td>
<td>Very low</td>
</tr>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>Elementary</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I.S.U.</td>
<td>3</td>
<td>5.4</td>
<td>3</td>
<td>5.4</td>
<td>33</td>
<td>58.9</td>
</tr>
<tr>
<td>Drake</td>
<td>4</td>
<td>11.8</td>
<td>5</td>
<td>14.7</td>
<td>22</td>
<td>64.7</td>
</tr>
<tr>
<td>Penn</td>
<td>0</td>
<td>0.0</td>
<td>4</td>
<td>26.7</td>
<td>7</td>
<td>46.7</td>
</tr>
<tr>
<td>Totals</td>
<td>7</td>
<td>6.7</td>
<td>12</td>
<td>11.4</td>
<td>62</td>
<td>59.0</td>
</tr>
<tr>
<td>Secondary</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I.S.U.</td>
<td>9</td>
<td>10.6</td>
<td>14</td>
<td>16.5</td>
<td>39</td>
<td>45.9</td>
</tr>
<tr>
<td>Drake</td>
<td>9</td>
<td>8.7</td>
<td>31</td>
<td>30.1</td>
<td>48</td>
<td>46.6</td>
</tr>
<tr>
<td>Penn</td>
<td>7</td>
<td>16.7</td>
<td>15</td>
<td>35.7</td>
<td>16</td>
<td>38.1</td>
</tr>
<tr>
<td>Totals</td>
<td>25</td>
<td>10.9</td>
<td>60</td>
<td>26.0</td>
<td>103</td>
<td>44.8</td>
</tr>
</tbody>
</table>
Table 16. The ranking of areas in terms of percentage of scores above the neutral region was as follows: physical education, 45.5; vocational, 41.6; science and mathematics, 40.0; social studies, 39.1; language arts, 38.4; home economics, 35.7; art and music, 25.9.

It was of interest to find that the area of science and mathematics had greater percentages of students above the neutral region than the more aesthetic areas. The three highest areas, physical education, vocational which includes agriculture, business, and industrial arts, and science and mathematics, are areas which are commonly accepted as subject areas concerned with physical rather than spiritual values.

The ranking of areas in terms of percentage of scores below the neutral region was as follows: home economics, 29.3; science and mathematics, 28.0; language arts 25.6; social studies, 22.2; vocational, 12.4; art and music, 9.6; and physical education, 6.0.

The area of physical education had the least scores in the low categories which indicates a consistency to select the religious answer as first or second choice. The other areas' percentages were less consistent.

The percentages of scores above the neutral region for all areas (excepting art and music) were above 35 percent which indicates a tendency toward the selection of religious answers to hypothetical classroom questions by the students prepared to teach in those areas of secondary education.
Table 16. Valence categories of scores on the Teacher Attitude Inventory by secondary areas of concentration

<table>
<thead>
<tr>
<th>Area</th>
<th>Score categories</th>
<th>40-48</th>
<th>36-39</th>
<th>29-35</th>
<th>25-28</th>
<th>16-24</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Very high</td>
<td>High</td>
<td>Neutral</td>
<td>Low</td>
<td>Very low</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>Home economics</td>
<td></td>
<td>4</td>
<td>9.5</td>
<td>11</td>
<td>26.2</td>
<td>17</td>
</tr>
<tr>
<td>Art and music</td>
<td></td>
<td>2</td>
<td>6.5</td>
<td>6</td>
<td>19.4</td>
<td>20</td>
</tr>
<tr>
<td>Language arts</td>
<td></td>
<td>5</td>
<td>12.8</td>
<td>10</td>
<td>25.6</td>
<td>14</td>
</tr>
<tr>
<td>Physical education</td>
<td></td>
<td>6</td>
<td>18.2</td>
<td>9</td>
<td>27.3</td>
<td>16</td>
</tr>
<tr>
<td>Science and</td>
<td></td>
<td>1</td>
<td>4.0</td>
<td>9</td>
<td>36.0</td>
<td>8</td>
</tr>
<tr>
<td>Mathematics</td>
<td></td>
<td>4</td>
<td>11.1</td>
<td>10</td>
<td>28.0</td>
<td>14</td>
</tr>
<tr>
<td>Social studies</td>
<td></td>
<td>3</td>
<td>12.5</td>
<td>7</td>
<td>29.1</td>
<td>11</td>
</tr>
<tr>
<td>Vocational a</td>
<td></td>
<td>25</td>
<td>10.9</td>
<td>60</td>
<td>26.0</td>
<td>103</td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td>25</td>
<td>10.9</td>
<td>60</td>
<td>26.0</td>
<td>103</td>
</tr>
</tbody>
</table>

*aVocational including agriculture, business, and industrial arts.
Excluding the religious preference of Jew because of the small number, the other three groups were very similar in the percentages in the "High" category and the "Neutral" region in Table 17. The percentages of scores above the neutral region for pre-service teachers who stated a religious preference of Catholic, Jew, or Protestant were all over 20 percent, but the percentage of Catholics was higher than the percentage of Protestants. Conversely, a higher percentage of Protestants' scores were below the neutral region.

In the "Other" category, the following scores were obtained: Christian Reformed, 43; Jehovah Witness, 42; Christ Our Savior, 42; Gospel Chapel, 36; Unitarians, 32, 26, and 24; Reformed Church of the Latter Day Saints, 30 and 29; and Christian Science, 29. The numbers of pre-service teachers who expressed preference for these religions were too small to use separately but the results were worthy of tabulation.

Of the three sects having no scores in the "Very high" category (Congregational, Episcopal, and Friends), two had the highest percentage of scores above the neutral region. The third (Episcopal) had the second lowest percentage above the neutral region and the highest percentage below. The Friends sect had none below the neutral region thus having a span of from 62.5 percent above to 0.0 percent below, compared with 20.0 percent above and 40.0 percent below for the Episcopal sect. The Lutheran and Christian sects had the highest percentages in the "Very high" category.
Table 17. Valence categories of scores on the Teacher Attitude Inventory by religious preference

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Very high</td>
<td>High</td>
<td>Neutral</td>
<td>Low</td>
<td>Very low</td>
</tr>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>Catholic</td>
<td>7</td>
<td>17.0</td>
<td>9</td>
<td>22.0</td>
<td>20</td>
<td>48.8</td>
</tr>
<tr>
<td>Jew</td>
<td>0</td>
<td>0.0</td>
<td>1</td>
<td>33.3</td>
<td>1</td>
<td>33.4</td>
</tr>
<tr>
<td>Protestant</td>
<td>25</td>
<td>9.2</td>
<td>60</td>
<td>22.1</td>
<td>134</td>
<td>49.5</td>
</tr>
<tr>
<td>None⁴</td>
<td>0</td>
<td>0.0</td>
<td>5</td>
<td>25.0</td>
<td>9</td>
<td>45.0</td>
</tr>
<tr>
<td>Totals</td>
<td>32</td>
<td>9.6</td>
<td>75</td>
<td>22.4</td>
<td>164</td>
<td>49.0</td>
</tr>
</tbody>
</table>

Note: None refers to those who did not state a preference.
Excluding the "Other" category, the percentages above the neutral region for each sect were ranked as follows: Friends, 62.5; Congregational, 44.5; Baptist, 50.0; Lutheran, 40.0; Christian, 38.9; Methodist, 28.0; Episcopal, 20.0; and Presbyterian, 14.3.

The ranking of percentages below the neutral region was: Episcopal, 40.0; Christian, 22.2; Presbyterian, 20.0; Baptist, 16.6; Methodist, 15.9; Congregational, 11.1; Lutheran, 10.0; and Friends, 0.0.

The Friends' and the Episcopalians' showed the greatest consistency in being very high in one of the two valence areas and very low in the other. Of the eight Protestant sects expressly selected by the pre-service teachers, only two, Episcopal and Presbyterians', had percentages above the neutral region of less than 29 percent. This evidence indicated a strong preference by most of the sects for the religious answers to hypothetical classroom questions in the Teacher Attitude Inventory. Only two sects, Episcopal and Christian, had percentages of more than 20.0 percent below the neutral range. Only three sects; Lutheran, Methodist and Presbyterian, had 50 percent or more in the neutral region.

**Mid-point Method**

This method of interpretation allowed the classification of the percentages into either the religious or other than religious categories. The second method of interpretation
of the scores on the Teacher Attitude Inventory was presented in Tables 19 through 24. This method excluded the neutral region. A score of 33 or above was operationally defined as a religious score. A score of 32 or below was considered indicative of an attitude other than religious.

In Table 19, the total percentages of 5.4 and 47.8 indicated only a slight tendency toward the religious side of the valence continuum, but these low percentages were due to the low percentage of I.S.U. students with scores above 32. Drake, with 58.4 percent, and Penn, with 73.7 percent above the midpoint score of 32, indicated strong religious tendencies in response to the questions in the Teacher Attitude Inventory.

The totals percentages in Table 20 gave evidence that women did not score higher on religious attitude than men. The percentage of 54.9 in the "High" and "Very high" categories, as presented in Table 20, for men was higher than the percentage of 52.1 for women. Both sexes were inclined to prefer the religious to the other than religious answers to the hypothetical classroom questions of the Teacher Attitude Inventory. This fact must be emphasized. Both sexes of the pre-service teachers did indicate preference for religious answers when only one religious answer was presented in a multiple of three choices for each hypothetical classroom question.

The percentages by schools suggested a different conclusion than total percentages. The percentage of scores
Table 18. Valence categories of scores on the Teacher Attitude Inventory by Protestant sects

<table>
<thead>
<tr>
<th>Sect</th>
<th>Score categories</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>Baptist</td>
<td>1</td>
<td>8.3</td>
<td>5</td>
<td>41.7</td>
<td>4</td>
<td>33.3</td>
</tr>
<tr>
<td>Christian</td>
<td>3</td>
<td>16.7</td>
<td>4</td>
<td>22.2</td>
<td>7</td>
<td>38.9</td>
</tr>
<tr>
<td>Congregational</td>
<td>0</td>
<td>0.0</td>
<td>5</td>
<td>55.6</td>
<td>3</td>
<td>33.3</td>
</tr>
<tr>
<td>Episcopal</td>
<td>0</td>
<td>0.0</td>
<td>2</td>
<td>20.0</td>
<td>4</td>
<td>40.0</td>
</tr>
<tr>
<td>Friends</td>
<td>0</td>
<td>0.0</td>
<td>5</td>
<td>62.5</td>
<td>3</td>
<td>37.5</td>
</tr>
<tr>
<td>Lutheran</td>
<td>8</td>
<td>16.0</td>
<td>12</td>
<td>24.0</td>
<td>25</td>
<td>50.0</td>
</tr>
<tr>
<td>Methodist</td>
<td>4</td>
<td>5.8</td>
<td>16</td>
<td>23.2</td>
<td>38</td>
<td>55.1</td>
</tr>
<tr>
<td>Presbyterian</td>
<td>1</td>
<td>2.9</td>
<td>4</td>
<td>11.4</td>
<td>23</td>
<td>65.7</td>
</tr>
<tr>
<td>Other*</td>
<td>2</td>
<td>20.0</td>
<td>2</td>
<td>20.0</td>
<td>4</td>
<td>40.0</td>
</tr>
<tr>
<td>Totals</td>
<td>19</td>
<td>8.6</td>
<td>55</td>
<td>24.9</td>
<td>111</td>
<td>50.2</td>
</tr>
</tbody>
</table>

*Other includes one Christian Reformed, one Jehovah Witness, one Christian Science, one Gospel Chapel, two Reformed Church of the Latter Day Saints, and three Unitarians.
Table 19. Valence categories of scores, excluding the neutral region, on the Teacher Attitude Inventory by schools

<table>
<thead>
<tr>
<th>School</th>
<th>41-48 Very high</th>
<th>33-40 High</th>
<th>24-32 Low</th>
<th>16-23 Very low</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
</tr>
<tr>
<td>I.S.U.</td>
<td>5</td>
<td>51</td>
<td>80</td>
<td>5</td>
</tr>
<tr>
<td>Drake</td>
<td>8</td>
<td>72</td>
<td>52</td>
<td>5</td>
</tr>
<tr>
<td>Penn</td>
<td>5</td>
<td>37</td>
<td>13</td>
<td>2</td>
</tr>
<tr>
<td>Totals</td>
<td>18</td>
<td>160</td>
<td>145</td>
<td>12</td>
</tr>
</tbody>
</table>
Table 20. Valence categories of scores, excluding the neutral region, on the Teacher Attitude Inventory by sex and by sex within schools

<table>
<thead>
<tr>
<th>School</th>
<th>Score categories</th>
<th>41-48</th>
<th>33-40</th>
<th>24-32</th>
<th>16-23</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Very high</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>Women</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I.S.U.</td>
<td>Very high</td>
<td>3</td>
<td>2.7</td>
<td>41</td>
<td>36.7</td>
</tr>
<tr>
<td>Drake</td>
<td>Very high</td>
<td>4</td>
<td>6.8</td>
<td>29</td>
<td>49.1</td>
</tr>
<tr>
<td>Penn</td>
<td>Very high</td>
<td>1</td>
<td>4.3</td>
<td>19</td>
<td>82.6</td>
</tr>
<tr>
<td>Totals</td>
<td>Very high</td>
<td>8</td>
<td>3.7</td>
<td>103</td>
<td>48.4</td>
</tr>
<tr>
<td>Men</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I.S.U.</td>
<td>Very high</td>
<td>2</td>
<td>6.9</td>
<td>10</td>
<td>34.5</td>
</tr>
<tr>
<td>Drake</td>
<td>Very high</td>
<td>4</td>
<td>6.8</td>
<td>29</td>
<td>49.1</td>
</tr>
<tr>
<td>Penn</td>
<td>Very high</td>
<td>4</td>
<td>11.8</td>
<td>18</td>
<td>52.9</td>
</tr>
<tr>
<td>Totals</td>
<td>Very high</td>
<td>10</td>
<td>8.2</td>
<td>57</td>
<td>46.7</td>
</tr>
</tbody>
</table>
higher than 32 for I.S.U. was slightly higher for the men than for the women, but the women's percentages of 60.2 for Drake and 86.9 for Penn were definitely higher than the 55.9 percent for Drake men and 64.7 for Penn men. The differences between schools was a contributory factor in the findings of the total percentage in favor of men over women.

In Table 21, the total percentages for elementary pre-service teachers in the "High" and "Very high" categories were less than 45.7 percent compared to 56.6 percent for the secondary pre-service teachers. The 80 percent of the elementary pre-service teachers at Penn in the "High" category was the highest percentage recorded for any of the cells in the table.

In Table 22, the combined "High" and "Very high" categories percentages ranked the secondary pre-service teachers as follows: vocational, 68.0 percent; science and mathematics, 62.5 percent; physical education, 60.6 percent; art and music, 58.0 percent; and home economics, 43.9 percent.

The combined "High" and "Very high" category percentages in Table 23 indicated that the percentages of pre-service teachers who expresses a preference for Catholic and Protestant religions were greater than 50 percent with Catholics scoring 11 percent higher than Protestants.
Table 21. Valence categories of scores, excluding the neutral region, on the Teacher Attitude Inventory by grade level and by grade level within schools

<table>
<thead>
<tr>
<th>Grade level</th>
<th>Score categories</th>
<th>41-48</th>
<th>33-40</th>
<th>24-32</th>
<th>16-23</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Very high</td>
<td>High</td>
<td>Low</td>
<td>Very low</td>
</tr>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>Elementary</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I.S.U.</td>
<td>2</td>
<td>3.6</td>
<td>18</td>
<td>32.1</td>
<td>36</td>
</tr>
<tr>
<td>Drake</td>
<td>3</td>
<td>8.8</td>
<td>13</td>
<td>38.2</td>
<td>17</td>
</tr>
<tr>
<td>Penn</td>
<td>0</td>
<td>0.0</td>
<td>12</td>
<td>80.0</td>
<td>2</td>
</tr>
<tr>
<td>Totals</td>
<td>5</td>
<td>4.8</td>
<td>43</td>
<td>40.9</td>
<td>55</td>
</tr>
<tr>
<td>Secondary</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I.S.U.</td>
<td>3</td>
<td>3.5</td>
<td>33</td>
<td>38.8</td>
<td>44</td>
</tr>
<tr>
<td>Drake</td>
<td>5</td>
<td>4.8</td>
<td>59</td>
<td>57.3</td>
<td>55</td>
</tr>
<tr>
<td>Penn</td>
<td>5</td>
<td>11.9</td>
<td>25</td>
<td>59.5</td>
<td>11</td>
</tr>
<tr>
<td>Totals</td>
<td>13</td>
<td>5.7</td>
<td>117</td>
<td>50.9</td>
<td>90</td>
</tr>
</tbody>
</table>
Table 22. Valence categories of scores, excluding the neutral region, on the Teacher Attitude Inventory by areas of concentration

<table>
<thead>
<tr>
<th>Area</th>
<th>Score categories</th>
<th>41-48</th>
<th>33-40</th>
<th>24-32</th>
<th>16-23</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Very high</td>
<td>High</td>
<td>Low</td>
<td>Very low</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>Home economics</td>
<td></td>
<td>1</td>
<td>2.4</td>
<td>17</td>
<td>41.5</td>
</tr>
<tr>
<td>Art and music</td>
<td></td>
<td>0</td>
<td>0.0</td>
<td>18</td>
<td>58.0</td>
</tr>
<tr>
<td>Language arts</td>
<td></td>
<td>2</td>
<td>5.1</td>
<td>20</td>
<td>51.3</td>
</tr>
<tr>
<td>Physical education</td>
<td></td>
<td>5</td>
<td>15.1</td>
<td>15</td>
<td>45.5</td>
</tr>
<tr>
<td>Science and mathematics</td>
<td></td>
<td>0</td>
<td>0.0</td>
<td>15</td>
<td>62.5</td>
</tr>
<tr>
<td>Social studies</td>
<td></td>
<td>3</td>
<td>8.1</td>
<td>18</td>
<td>48.7</td>
</tr>
<tr>
<td>Vocationala</td>
<td></td>
<td>2</td>
<td>8.0</td>
<td>15</td>
<td>60.0</td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td>13</td>
<td>5.7</td>
<td>117</td>
<td>50.9</td>
</tr>
</tbody>
</table>

aVocational including agriculture, business and industrial arts.
Table 23. Valence categories of scores, excluding the neutral region, on the Teacher Attitude Inventory by religious preference

<table>
<thead>
<tr>
<th>Religion</th>
<th>Score categories</th>
<th>16-23</th>
<th>24-32</th>
<th>33-40</th>
<th>41-48</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Very low</td>
<td>No.</td>
<td>%</td>
<td>Low</td>
<td>No.</td>
</tr>
<tr>
<td>Catholic</td>
<td>2</td>
<td>5</td>
<td>12.2</td>
<td>13</td>
<td>120</td>
</tr>
<tr>
<td>Jew</td>
<td>1</td>
<td>0</td>
<td>0.0</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>Protestant</td>
<td>8</td>
<td>13</td>
<td>4.8</td>
<td>121</td>
<td>415</td>
</tr>
<tr>
<td>None*</td>
<td>1</td>
<td>9</td>
<td>45.0</td>
<td>10</td>
<td>35</td>
</tr>
<tr>
<td>Totals</td>
<td>12</td>
<td>18</td>
<td>5.4</td>
<td>145</td>
<td>480</td>
</tr>
</tbody>
</table>

*None refers to those who did not state a preference.
Table 24. Valence categories of scores, excluding the neutral region, on the Teacher Attitude Inventory by Protestant sects

<table>
<thead>
<tr>
<th>Sect</th>
<th>41-48</th>
<th>33-40</th>
<th>24-32</th>
<th>16-23</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Very high</td>
<td>High</td>
<td>Low</td>
<td>Very low</td>
</tr>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>Baptist</td>
<td>1</td>
<td>8.3</td>
<td>6</td>
<td>50.0</td>
</tr>
<tr>
<td>Christian</td>
<td>2</td>
<td>11.1</td>
<td>9</td>
<td>50.0</td>
</tr>
<tr>
<td>Congregational</td>
<td>0</td>
<td>0.0</td>
<td>8</td>
<td>88.9</td>
</tr>
<tr>
<td>Episcopal</td>
<td>0</td>
<td>0.0</td>
<td>3</td>
<td>30.0</td>
</tr>
<tr>
<td>Friends</td>
<td>0</td>
<td>0.0</td>
<td>7</td>
<td>87.5</td>
</tr>
<tr>
<td>Lutheran</td>
<td>6</td>
<td>12.0</td>
<td>23</td>
<td>46.0</td>
</tr>
<tr>
<td>Methodist</td>
<td>1</td>
<td>1.5</td>
<td>35</td>
<td>50.7</td>
</tr>
<tr>
<td>Presbyterian</td>
<td>0</td>
<td>0.0</td>
<td>15</td>
<td>42.9</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
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<td>20.0</td>
</tr>
<tr>
<td>Totals</td>
<td>12</td>
<td>5.4</td>
<td>108</td>
<td>48.9</td>
</tr>
</tbody>
</table>

*Other included one Christ Our Savior, one Christian Reformed, one Christian Science, one Gospel Chapel, and one Jehovah Witness, two Reformed Church of the Latter Day Saints and three Unitarians.*
The combined percentages for "High" and "Very high" in Table 24 ranked the Protestant sects in the following order: Congregational, 88.9; Friends, 87.5; Christian, 61.1; Baptist, 58.3; Lutheran, 58.0; Methodist, 52.2; Presbyterian, 42.9; Other, 40.0; and Episcopal, 30.0.

D. Correlations

The Pearson product-moment correlation technique (Appendix I) was used to test the correlation between the scores on the Teacher Attitude Inventory and the grade point averages of the pre-service teacher education majors.

The coefficient of correlation between the scores on the Teacher Attitude Inventory and the grade point averages of the pre-service teachers was 0.1762. This coefficient indicated that there was absolutely no correlation between them. Translated into meaningful terms, the academic grade achievements of the pre-service teachers had no relationship to the scores which the pre-service teachers obtained on the Teacher Attitude Inventory.

The Pearson product-moment coefficient of correlation between the scores on the Teacher Attitude Inventory and the scores on the Study of Values was also computed. The coefficient of correlation between these two variables was 0.5383. The coefficient merely indicated that the two instruments measure the same value. The Study of Values has been validated and asserted reliable (1), (11), and (22). The evidence deter-
mined that the Teacher Attitude Inventory did produce results comparable to a general attitude inventory not specifically intended for pre-service teachers or teachers.
V. DISCUSSION

The recent United States Supreme Court's decisions concerning religion in the public schools have brought an awareness to the American people which has resulted in pressures upon educators regarding the place of religion in the public schools, (§) and (¶). With this increased public awareness, the teacher role becomes even more important because he is an educator closely associated with the public. A means of measuring the religious attitudes of teachers might be an important factor in determining the presence or absence of the teaching of religion in the classrooms of their schools.

The attitude of the teacher might have an effect upon the students although the evidence is controversial on this point. Little attention, legislation, or research has been directed toward the classroom activities of teachers. One method by which research data on the attitudes of teachers can be obtained is to measure the attitudes of pre-service teachers as these young people will be in-service teachers within a short time.

The purpose of this investigation was to determine the religious attitudes of pre-service teacher education majors at three institutions of higher learning. An instrument was developed to measure the attitudes of the pre-service teachers toward religion in general and toward the specific religious value object; e.g., God, the soul, sin, the Ten Commandments, and/or the Holy Bible.
The discussion was divided into two parts - a discussion of the instrument constructed for this research, and a comparison of the results reported in Chapter IV.

A. The Instrument

A basic assumption was made in this research that the Teacher Attitude Inventory, as the instrument constructed for this study was named, measures the religious attitudes of pre-service teacher education majors.

The ultimate consideration for any measurement technique is its validity. The extent to which the Inventory measures the religious attitudes of the pre-service teachers is its validity. The validity is dependent, in part, upon its reliability, which is the extent to which it yields consistent measures. No instrument can be more valid than it is reliable (33).

The construction of the Teacher Attitude Inventory was essential to the research. Reliability, obviously, could not be established until after the instrument was constructed. Although a test for reliability was not a major portion of this investigation (due to the basic assumption), a test-retest reliability check was made with a small group of Iowa State University secondary pre-service teachers. Twenty students composed the test-retest group. The second testing took place twenty-six days after the first administration of the test. The coefficient of correlation
was 0.702. According to Wert (70), a coefficient range of 0.65 to 0.85 yields group predictions accurate enough for most purposes. This reliability coefficient compared favorably with the reliability coefficients of certain well-known scales. Krech, Crutchfield, and Ballachy (33) reported that Ferguson obtained reliability coefficients ranging from 0.52 to 0.80 for 20-item forms and from 0.68 to 0.89 for 40-item forms. They (33) refer also to Likert scales as being higher than Thurstone scales. The Likert scales referred to have reliabilities from 0.79 to 0.92 so by inference the Thurstone scales are reliable to some extent below this range.

The validity of the Teacher Attitude Inventory was determined by employing the judgment of classroom teachers as to the representativeness of the sample items. The test items used were questions and answers which could have occurred in the classroom. All of the questions involving religion were questions which were actually asked and answered in their classrooms. This established content validity. The items which contained a religious answer as one of the answer choices had one, and only one, such answer which could be cited in the Holy Bible (62) as a religious answer.

One of the recent techniques that has been developed in an attempt to improve the validity of attitude measurement is the disguised technique. This technique was utilized in the Teacher Attitude Inventory by using 29 decoy questions. During informal interviews following the administration of the
Teacher Attitude Inventory almost all of the pre-service teachers guessed that the instrument measured their scientific attitude. The few who thought that it might measure religious attitudes were unsure enough of their notion that they asked what attitudes were measured, and, after being told, said they had suspected it, but were not certain.

The question of interpretation was resolved by using two interpretation scales. Krech, Crutchfield, and Ballachey (33), after reviewing all of the accepted types of attitude scales, stated: "The types of scales we have reviewed do not satisfactorily define the neutral region." The scales reviewed by them (33) established the neutral region arbitrarily, or in a direct way from the scales themselves, or, as in the Likert scale, the interpretation of a neutral point is very ambiguous.

This researcher contended that the neutral area is not a region but a point on a scale due to an assumption that attitudes are for or against the value object of the attitude. The scale established with the score of 32 as the mid-point, after careful determination of all the possible combinations of first, second, and third choices, was considered the better scale for interpreting the Teacher Attitude Inventory.

From careful appraisal of the construction and initial administration of the instrument, the Teacher Attitude Inventory appeared to be valid and reliable as a means to measure religious attitudes of pre-service teachers. The
establishment of this fact was beyond the scope of this research because the basic assumption of the study assumed this to be the case, but initial evidence tended to substantiate the assumption.

The results of the correlation established between the scores of the Teacher Attitude Inventory and the scores of the Study of Values gave further evidence that the Teacher Attitude Inventory does, in fact, measure religious attitudes.

B. Comparison of Results

The means of frequencies of first, second, and third choices of the religious answers to the 16 hypothetical classroom questions which involved a religious answer and the mean scores on the Teacher Attitude Inventory indicated that Drake and Penn students had higher religious attitudes than the Iowa State University students.

The chi-square test showed a highly significant difference between the frequency of choices of the religious answers between the pre-service teachers at the three schools.

In the comparison of the results of the two interpretation methods, the same rank was obtained when the "High" and "Very high" categories combined percentages were used; Penn College was highest, Drake University was second, and Iowa State University was low.

The difference between schools was presented graphically
by plotting the percentage of frequencies of first choice of the religious answers (Figure 1), and by plotting the percentage of frequencies of scores on the Teacher Attitude Inventory (Figure 2).

In Figure 1, the peak for Iowa State University students was at four first choices of the sixteen possible choices of religious answers. The other high points fell at five and three first choices. This indicated that three to five first choices were of greatest preference by the Iowa State University pre-service teachers.

The three peak percentages for Drake University pre-service teachers were at five, six, and seven first choices of the religious answers. The three highest percentages for William Penn College pre-service teachers were at six, seven, and eight first choices of the religious answers.

The profile, in Figure 1, for all of the pre-service teachers clearly illustrated that the profile of frequency of first choices by the Iowa State University students was very different from the profiles of the other schools.

Figure 2, presented the profiles of the frequencies of scores on the Teacher Attitude Inventory. When the Iowa State University profile was compared with the profiles for the total sample and for the other schools, the difference was apparent. The peak percentages for Iowa State University pre-service teachers were at scores of 31 and 32, both of which represent a tendency toward attitudes other than religious.
Figure 1. Profile of the percentage of pre-service teachers selecting each frequency of first choices to the religious questions of the Teacher Attitude Inventory.
Scores on the Teacher Attitude Inventory

I.S.U. --- Drake ----- Penn ---- Total

Figure 2. Profile of the percentages of scores of pre-service teachers on the Teacher Attitude Inventory.
The profiles for Drake University and Penn College indicated high tendencies toward religious attitudes as did the profile for the total sample.

The comparison of the results of the Teacher Attitude Inventory by sex was very important. Allport, Vernon and Lindzey (1) use two separate scales; one for men, and one for women. Allport is considered a leading authority in attitude measurement, and this differential is generally accepted. The null hypothesis was stated in this research. The results indicated that the mean for frequency of first choices and the mean score for women were lower than those for men. This contradicted the Allport, Vernon, Lindzey (1) scale which rates women's religious attitudes higher than men's.

The chi-square test indicated that the difference was not significant at the five percent level. Women did not have higher religious attitudes than men. At least, they did not at Iowa State University, Drake University, and Penn College when tested by the Teacher Attitude Inventory.

The comparisons of results of the two interpretation scales for the sexes gave some weight to the assumption that the second method of interpretation, without a neutral region, was more valid. The combined percentage of "High" and "Very high" categories for women was 11.8 lower than the percentage for men in the interpretation using the neutral region, and only 2.8 percent lower than men using the mid-point method. Knowing that there is no significant difference between the scores of
men and women on the Teacher Attitude Inventory, the mid-point method seemed more logical because of the greater difference in percentages using the other method.

The chi-square technique indicated a very significant difference between elementary and secondary pre-service teachers. An examination of the mean frequencies of choices revealed that there was, in fact, a consistent superiority of mean frequencies of first choices by the pre-service teachers prepared to teach in secondary schools, but the distribution of the mean frequencies of second and third choices were not significantly different.

The combined "High" and "Very high" percentages, from Table 15, were 18.1 for elementary and 36.9 for secondary pre-service teachers. The secondary percentage was more than twice as great as the elementary percentage.

The combined percentage of "High" and "Very high", from Table 21 which does not include a neutral region, showed a difference, but not nearly so extreme a difference as that shown by the other method of interpretation.

The comparisons of the secondary pre-service teachers by areas of concentration indicated no significant difference, but the ranking of the various areas was rather surprising. In both methods of interpreting the scores of the Teacher Attitude Inventory, the areas of physical education, science and mathematics, and vocational which included agriculture, business, and industrial arts had the highest percentages when
the "High" and "Very high" category percentages were combined. The comparisons by religious preference indicated that the Catholic pre-service teachers' mean score was a little higher than the mean score of the Protestants'.

Chi-square indicated a significant difference at the five percent level between the religious groups. The difference was between the frequencies of choices of religious answers by the students who gave no preference or stated "None" as their religious preference and the Catholics, especially, because there was a great discrepancy between the frequencies of first and third choices of these two groups.

Some comment about the consistent high means and percentages recorded for Penn College students is in order. It would be presumptuous to assume that the religious affiliations of the school caused the religious tendencies recorded for its students. It was beyond the scope of this investigation to establish causation for the results, but it was interesting to consider the evidence briefly. There were only eight Friends or Quakers in the Penn population of pre-service teachers. The other 52 members of the population stated preference for various Protestant sects and the Catholic faith in much the same distribution as at the other schools. Religious preference of the students could not be inferred as the cause. But the evidence remained. Penn women had the highest mean score and mean frequency of first choice. Penn men ranked highest in mean score and mean frequency among the men. Penn elementary
pre-service teachers had the highest means among the elementary group. Penn secondary pre-service teachers had the highest means among the secondary group.

The comparisons among the Protestant sects indicated that all of the named sects, except Episcopal, Presbyterian, and Methodist, had mean frequencies of first choice of more than six and had mean scores above the totals mean score of 32.86.

A highly significant difference was indicated by the chi-square test between the frequencies of choices by sects. An examination of the data and mean scores revealed the reason for this difference. The distribution of frequencies of choices is very different for certain of the Protestant sects.

When the sects were ranked by combined percentages of "High" and "Very high" interpretation categories, a pattern was observed although the rankings varied somewhat with the two methods of interpretation.

The pattern was that the percentages for Friends and Congregational were high in both methods, and Episcopal, Methodist, and Presbyterian were low in both. No inferences are implied to any population other than the one tested.
VI. SUMMARY

A. The Scope of the Study

The purpose of this investigation was to determine the religious attitudes of pre-service teacher education majors at three institutions of higher learning in Iowa.

A primary delimitation of the study was the definition of religious attitude as tendencies to act in such a way as to attain certain values which are conceived of as residing in and proceeding from a power or powers which when dramatized as personal are thought of as God or gods.

Three delimitations were imposed in relation to the college students studied. The students were limited to those who:

1. were pre-service teacher education majors at Iowa State University of Science and Technology, Drake University, and William Penn College.
2. were academically prepared to teach after graduation.
3. would graduate from their respective schools during the first six months of 1965.

A further delimitation was that the study was directed to the religious atmosphere in informal teaching situations in the public schools; not with formal religious instruction or exercises.
B. The Results

Each of the objectives of the investigation has been presented in order.

The development of an instrument to measure the religious attitude of pre-service teachers

The Teacher Attitude Inventory was constructed with the assistance of a panel of teachers (Appendix E). The technique used was a disguised approach to the measurement of religious attitude. More science-oriented questions were used than any other to disguise the attitude which was being measured. The instrument included 16 test items and 29 decoy items. Each test item included only one religious answer which was citable in The Holy Bible (62). The answers to the questions, which were posed as hypothetical classroom questions, were multiple choice. One choice in each series of three choices was a religious answer and the other two choices were other than religious answers.

The student selected a first, second, and third choice for each question. The tests were scored by allowing the weight of three points for each first choice, two points for each second choice and one point for each third choice of a religious answer. The extreme range of scores, therefore, was 16 through 48 for the 16 religious questions. The test was interpreted both with, and without, a neutral region.

Only one reliability coefficient was established, but
this coefficient of 0.702 was considered accurate enough for the purpose of this study (70). The Teacher Attitude Inventory had content validity as discussed in Chapters III and IV. It applied directly to the teacher in a classroom situation. It was unique because it calls for an opinion from the pre-service teacher predicated upon the emotional component due to his religious background and the cognitive component due to the hypothetical classroom situation imposed, which draws upon the pre-service teacher's opinion as to what the role of the teacher should be in answering the questions. The resultant answers should be opinions representative of the true attitude toward the classroom situation.

The tendency of pre-service teachers to select religious answers

In general, the evidence indicated that the pre-service teachers did, in fact, tend to select religious answers to the hypothetical classroom questions. The sum of the means of frequencies of first and second choices to the religious answer indicated that the students selected the religious answer as first or second choice in \( \frac{11.3671}{16} \) of the 16 religious questions. The mean score of 32.8567 indicated that the tendency was to select religious answers.

The establishment of an attitude profile

The attitude profiles of the pre-service teachers at Iowa State University, Drake University, Penn college, and the total
population were presented in two figures. One was based upon
the scores on the Teacher Attitude Inventory, and the other
was based upon the frequencies of first choices of the relig-
ious answers in that instrument. The profiles of the I.S.U.
students were different from the other profiles on both figures.

The determination of differences, if any, in the results of
the Teacher Attitude Inventory between classification of
pre-service teachers

Data observation and score interpretations indicated that
differences existed, but chi-square was employed to determine
significant differences statistically.

The null hypothesis, (Hypothesis 1) that no differences
were present between any of the classification groups was
rejected.

By treating each classification as a separate null
hypothesis, the results using the chi-square test, were as
follows:

1. There was a highly significant difference between
   schools, and between elementary and secondary
   pre-service teachers. These two categories,
   (a) and (b) of Hypothesis 1 was rejected.

2. There was a significant difference between
   religions at the five percent level of
   significance. Category (d) of Hypothesis 1
   was rejected.
3. There was no significant difference between men and women or between areas of concentration in preparation for secondary school teaching. Categories (c) and (e) of Hypothesis 1 were accepted.

4. An additional chi-square test was calculated for the Protestant sects. There was a very significant difference between the Protestant sects.

Additional analysis of differences

The scores of the pre-service teachers on the Teacher Attitude Inventory represent the valence of their attitudes toward the value objects represented by the hypothetical classroom questions. The degree of their religious attitude was interpreted by two interpretation scales. Both scales indicated that a plurality of pre-service teachers in most groups have high religious attitudes. Of the 39 classifications included in the study, only six were identified in the "Low" and "Very low" categories by both scales. Four additional classifications were placed in these categories by the "mid-point" method. Twenty-nine classifications, or 74 percent of the groups, therefore, had a higher percentage of scores in the "High" and "Very high" categories than in the "Low" and "Very low" categories.

When the tests of the hypotheses were interpreted, the group identification by the mid-point interpretation scale
assisted in evaluating the significant differences between groups.

A critical examination of the data and tables revealed that the additional groups were groups which had low religious attitudes. These observations gave evidence that this interpretation scale gave a more complete and accurate identification of the groups, which included a majority of pre-service teachers with low and with high religious attitudes, without necessitating referral to the data and tables.

A determination of the correlation between the scores of the Teacher Attitude Inventory and the grade point averages

Hypothesis 2: Scores obtained from the Teacher Attitude Inventory will positively correlate with the grade point averages of the pre-service teacher education majors.

It was tested by the Pearson product-moment correlation technique. The coefficient of correlation was -.1762. The hypothesis was rejected. No correlation existed between the scores obtained from the Teacher Attitude Inventory and the grade point averages of the pre-service teacher education majors.
A determination of the correlation between the scores of the Teacher Attitude Inventory and the scores on the religious scale of the Study of Values

Hypothesis 3: The scores obtained from the Teacher Attitude Inventory will positively correlate with the scores on the religious scale of the Study of Values by Allport, Vernon, and Lindzey.

It was tested by the Pearson product-moment correlation technique. The coefficient of correlation was +.5383. The hypothesis was accepted. There was a positive correlation between the scores of the pre-service teachers on the two instruments used in the study. The interpretation of this finding was that the Teacher Attitude Inventory does measure religious attitudes. The Study of Values is a valid and reliable instrument, therefore, the positive correlation indicates that the two instruments measure the same attitude.

Contributions of information pertinent to the subject of the teaching of religion in an informal classroom situation

Teachers of kindergarten through grade twelve selected the test items, used in the Teacher Attitude Inventory, as representative of questions which are asked in actual classroom situations. The large percentage, 74 percent, of groups or classifications of pre-service teachers, who scored above
the mid-point of 32 indicated that those tested did tend to select the religious answers as the answers they would give in an informal instructional situation. The pronounced differences between schools is significant. Actually, all of the results of the study were pertinent to the informal teaching of religion if the results of this study prove to be validated by further studies of in-service teachers.

Contributions of pertinent information to the current dilemma regarding the removal of religion from the public schools by legislative and judicial action

If the results of this study could be projected to larger populations, the statement would be that religion cannot be removed from the public school by legislative and/or judicial action. Several "ifs" are involved even in this hypothetical projection of the results of this study. If the attitudes of the teacher are reflected in the attitudes of the students, this would be true. If the personality of the teacher, in fact, affects the learning of the student, this would be true. But these "ifs" have not been tested sufficiently to make such a conclusion. However, the findings of this study do contribute information which will, hopefully, aid in the resolution of the current dilemma.
The development of a benchmark study which may be used to determine the religious attitudes of the in-service teachers

The investigator anticipates further validation and reliability studies will be undertaken with the Teacher Attitude Inventory. The range of scores, the careful construction of the instrument, the scoring and the evaluation or interpretation techniques employed indicated that the instrument is valid. Further studies with pre-service and/or in-service teachers are needed. The supposition is that the religious attitudes of the in-service teachers will be measured by the Teacher Attitude Inventory. The difference of a few months between the reality of being a teacher and being a potential teacher may not produce any significant differences in the results obtained by the administration of the Teacher Attitude Inventory. However, years of experience may produce substantial changes in attitudes over a period of time.

C. Interpretation of the Results

Probably of greatest importance to an evaluation of the results of the study was the lack of difference between men and women pre-service teachers. Allport, Vernon, and Lindsey's (1) use of a dual interpretation scale for men and women gives support to the generally accepted notion that women score higher on religious attitude scales. This was not true of the female pre-service teachers included in this study. The results suggested that women teachers may have lower relig-
ious attitudes than women in the general non-teaching popula-
lation. Possibly men who enter the teaching profession have
higher religious attitudes than men in the general non-teaching
population. The former suggestion was borne out in this study
because the great majority of the elementary pre-service teach-
ers were women, and their scores were definitely low in reli-
gious attitudes in the comparisons. Boles (8) reported that
the elementary teachers in the Napa Study had low religious
attitudes. This investigation corroborated the results of
that study.

The significant differences between the results of the
Teacher Attitude Inventory for Iowa State University students
and the students of Drake University and William Penn College
indicated that the students who attend a large state univer-
sity of science and technology tend to have lower religious
attitudes than do the students who attend an independent
university or a small sectarian-sponsored college. This cannot
be satisfactorily explained by the prevalent notion that scien-
tists and mathematicians, generally, have attitudes other than
religious. This notion is unsubstantiated, according to
Bishop (27), and was refuted by the rankings of the secondary
areas of teaching for which the pre-service teachers are pre-
pared to teach, obtained in this study.
The following statements summarize the interpretation of the results of this investigation and suggest uses for the Teacher Attitude Inventory by educators.

1. There is a difference in the valence and degree of religious attitudes of pre-service teachers at the institutions of higher learning included in this study.

2. The Teacher Attitude Inventory does measure the religious attitudes of pre-service teachers; therefore, it may measure the religious attitudes of other teachers.

3. The interpretation scale developed in this study, based upon the contention that an attitude is never neutral, was valid to the same degree as an interpretation scale which included a neutral region.

4. The results of this study indicated that a single interpretation scale for religious attitudes of teachers may be more valid than a separate interpretation scale for each sex.

5. The pre-service teachers with scores of 33 or above on the Teacher Attitude Inventory have a tendency to respond to classroom questions with religious answers.
6. The Teacher Attitude Inventory might be used by administrators and/or boards of education to determine the religious attitude of applicants for teaching positions whether the community desired its teachers to have a religious attitude, or desired its teachers to have an attitude other than religious.

7. The Teacher Attitude Inventory might be administered to in-service teachers to obtain information about the religious attitudes of the teachers in the school district with which to answer questions and pressure by individuals and interest groups.

D. Recommendations for Further Study

There is an urgent need for research in the entire field of teacher performance of which teacher attitudes are a component. After surveying the summarizations of the whole field of teacher performance in volumes of the Review of Educational Research and in the Encyclopedia of Educational Research, Rose (51, p. 50) stated: "The total product of such study has been so meager in terms of really useful results that one is impelled to ask why."

Some specific recommendations for further study are as follows:

1. A reliability study of the Teacher Attitude
Inventory.

2. A follow-up study of a sample of the same students used in this investigation after they become in-service teachers.

3. The application of the Teacher Attitude Inventory to a study of in-service teachers.

4. The application of the Teacher Attitude Inventory to a study of parents who as parents are asked many of the same questions which are asked of teachers.

5. Research designed as a predicative study rather than an exploratory investigation of pre-service teachers.

6. An investigation designed to explore causation for significant differences between categories of pre-service teachers.

7. A study of the relative merits of interpretation scales for the measurement of the religious attitudes of men and women.

8. Further investigation of the neutral region as an essential component of the interpretation of attitude scales.

9. A comparative study of the religious atti-
tudes of pre-service teachers at parochial and non-parochial institutions of higher learning.

10. Studies concerning the hypothesis that teacher attitudes are significant for student learning.

11. Studies to determine the effect of teachers' attitudes upon the conduct of students.

12. Studies to determine the effect of teachers' attitudes upon the attitudes of students.

13. Studies to determine whether sectarian religious concepts are taught in day-by-day informal situations which develop in the classroom incidental to current events or the coverage of formal subject matter.

14. Studies relating to the effect of teachers' personality and character, as well as attitudes, upon the students.
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VIII. ACKNOWLEDGMENTS

I wish to extend my sincerest appreciation to the many people who assisted in the preparation of this dissertation. The brevity of my remarks in no way lessens my gratitude. I especially want to thank my advisor, Dr. Richard Manatt, who has given me stimulating encouragement and advice at every stage of my work. Also, I wish to thank the other members of my committee, Dr. Ray Bryan, Dr. Donald Boles, Dr. William Kenkel, and Dr. Virgil Lagomarcino, for their constructive criticisms. I am indebted to Dr. Trevor Howe and Mr. Roy Hickman for advice in regard to statistical procedures. Dr. Martin Fritz gave timely assistance in the construction and scoring of the instrument. I am indebted to Dean Schultze, Dr. Conrad White of William Penn College; Dean Schwartz, Dr. Marvin Fellers, and Dr. Desmond Bragg of Drake University; Dr. Joseph Shea and Dr. Joseph Frost of Iowa State University for their cooperation in the administration of the instrument. My appreciation is also extended to the panel of teachers and the students who participated in the study, and to Mrs. Bernadine Wall, Sandy and Mrs. Dorothy Borror for their preliminary typing. Very special thanks is due Mrs. Ellabelle Joplin for her patience and excellent typing, and to Roger, Peggy, John, Bobby, and my wife, Eleanor, for their understanding and encouragement.
Dean
College of Education
University

Dear Dean:

In partial fulfillment of the requirements for a Ph.D. degree in educational administration, I am writing a dissertation entitled "The Religious Attitudes of Pre-service Teacher Education Majors." A teacher attitude inventory has been constructed which will be administered to all June graduates of Iowa State University who plan to enter the teaching profession after graduation. Would it be possible to arrange to administer the inventory to the University June graduates sometime prior to their graduation? I have enclosed a copy of the inventory which you may study at your convenience.

The purpose of the study is to determine the religious attitudes, if any, of the pre-service teachers of this graduating class. The inventory purports to measure these attitudes by posing hypothetical classroom questions which may be answered by a weighted answer of first, second, or third choice. Sixteen of the forty-five questions contain an answer which is citable to some theistic religion. A profile of response is desired rather than an individual evaluation.

I would appreciate the opportunity to explain the project to you personally if you would grant me an interview.

Sincerely,

R. J. Vanden Branden

cbj
TEACHER ATTITUDE INVENTORY

By

R. J. VANDEN BRANDEN

The series of questions included in the inventory are questions which might be asked in any classroom. They are posed as specific questions as a student might ask them. Usually such questions are unexpected and require a spontaneous, unplanned answer or action by the teacher. Presumably, in a classroom situation some answers might be deferred to a later time, but in this inventory you are asked to select the answer or action which you believe would most suitably answer the question in each case. There are no right or wrong answers.

Please fill in all of the requested information blanks before beginning the inventory. Proceed at your own speed after carefully reading the instructions on the answer sheet.
1. "Why do we have to go to school?"
   (a) The law says that you must.
   (b) God created us with an intellect. It would be sin-
       ful to not learn as much as we can.
   (c) Adults want you to learn as much as possible to
       prepare you for a job.

2. "Why would salt ruin our lawn?"
   (a) It causes the water to leave the root cells of the
       grass.
   (b) It smothers the grass.
   (c) It would make the soil too acidic.

3. "Where did we come from?"
   (a) God created us.
   (b) There is some evidence that evolution has played a
       part in man's development, but how he first came
       to be is best explained by the Bible.
   (c) Man developed from early life forms.

4. "Why is a rock different from a bone?"
   (a) The rock has never been alive.
   (b) It is different in chemical structure.
   (c) It isn't. Some rocks have the same chemicals as
       bones.

5. "My mother says that this story is 'dirty' and I don't
   have to read it."
   (a) Your mother is entitled to her opinion, but it is
       an excellent example of a style which I insist
       that you study. You will read it or take a lower
       grade.
   (b) I'll call your mother. You may skip reading it for
       now. The rest of you will finish reading the story
       during class.
   (c) Class, maybe it is unsuitable. Let's turn to pg.
       66 and read a different story.

6. "All of the kids say that there is no Santa Claus. I
   know you always tell the truth. Is there a Santa Claus?"
   (a) No, there is not.
   (b) Santa is not a real man, but he represents the spirit
       of giving and this spirit is very real.
   (c) Yes, so long as you believe it, he is real.

7. "What is the most important reason why man can't inhabit
   the moon?"
   (a) There is no water or soil.
   (b) Because he would be almost weightless.
   (c) Because of the extremes in temperature.
8. "Are we animals?"
   (a) No, we are separate beings created in God's image.
   (b) Yes, we are certainly not plants.
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   (a) It was created.
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    (a) I agree. Tell him to call the Superintendent.
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    (b) Because his parents have dark skin. We always look like our parents.
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12. Upon catching a student cheating during a test, he retorts: "I'm not the only one. Others cheat too!" What would you say?
    (a) That is no excuse. Report after school!
    (b) You know the rules. Turn in your paper!
    (c) Do you remember the explanation of the Ninth Commandment which teaches us to be just and true in all our dealings and to honour and obey the civil authority?

13. "Why does water always swirl clockwise when it goes down the drain?"
    (a) It doesn't in this hemisphere.
    (b) Because of gravity.
    (c) Because of the earth's movement in space.

14. "Is capital punishment wrong?"
    (a) No. An eye for an eye and a tooth for a tooth. He has broken a Commandment and must be punished in like form.
    (b) Yes. There is never a time when we should do murder for it is forbidden by a Commandment.
(c) It depends. For a fiendish, heinous murder, the killer does not deserve to live according to Iowa law.

15. "My Dad says everybody 'pads' their income tax return."
(a) Everybody does not pad their return. Those that do are dishonest.
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(c) We are being cheated by the people who pad their returns. More taxes are levied to make up for those who cheat. They should be reported.

16. "I can't play with him. My mother said that he goes to a church that we don't like!"
(a) All right. Pick another partner.
(b) Religion has no place in our schools. You will keep him as a partner.
(c) One of the Commandments demands that we love our neighbors. You must have misunderstood your mother. Let's continue the game.

17. "Just because I'm smart I'm expected to do lots of extra work. I want a transfer to a general track class."
(a) I see your point of view. I'll transfer you at once.
(b) God gave you a wonderful intellect. You must use your talents and learn as much as possible as He intended when He gave you your brains.
(c) This is a very competitive world. By applying yourself, you will have a big advantage over the other kids when you graduate. Stop in later and we'll talk about it.

18. "Why do I have to take hygiene? I know all about it."
(a) You'll find that there will be many new subjects discussed.
(b) Swell! You should get top grades if you know all about it.
(c) We want you to have a review of health and hygiene facts just to be certain that you haven't forgotten something.

19. "Seriously, which came first - the chicken or the egg?"
(a) As God created animals, the chicken must have been first.
(b) Life forms evolved from organic compounds and it is more logical to assume that self-sufficient adults came first.
(c) That's a silly riddle. Your guess is as good as mine.
20. "What is color?"
   (a) It is a wavelength of light.
   (b) It is a pigment present in the object.
   (c) It is a force similar to electricity - used but not understood.

21. "Why does wool unravel when it is out on the bias?"
   (a) It doesn't necessarily.
   (b) The yarn is too loose.
   (c) The woof is destroyed.

22. "Which kind of food has the most calories per ounce?"
   (a) Fat
   (b) Carbohydrates.
   (c) Protein, or I don't know.

23. "What is the difference between a bolt and screw?"
   (a) A screw is pointed.
   (b) A bolt has smaller threads.
   (c) Neither of the above. It depends upon how they are used.

24. "In what sport is 'love' used as part of the scoring?"
   (a) Golf.
   (b) Tennis.
   (c) I'm not certain.

25. "What is four square?"
   (a) It is a game played by youngsters.
   (b) It is a military expression.
   (c) I'm not certain.

26. "What is life?"
   (a) Protoplasm.
   (b) Nobody knows.
   (c) A complex combination of chemicals.

27. "Why is man different from other living things?"
   (a) He has higher intellect and the ability to laugh.
   (b) He possesses a soul.
   (c) He can use his brain and his hands better.

28. "Which were created first - plants or animals?"
   (a) Plants.
   (b) Animals.
   (c) There is no proof that either were created.

29. "Is it possible for hydrogen, carbon, and oxygen to combine and form a living thing?"
   (a) No.
(b) Yes, if the right climatic conditions are present.
(c) Nobody knows for certain.

30. "Why do we hate Communists?"
   (a) They are plotting to overthrow our form of government.
   (b) They are atheists.
   (c) They are enslaving weaker nations.

31. "Why should we pay social security to benefit old people when we are so young?"
   (a) We should not be required to do so. Our government is becoming socialistic.
   (b) In a welfare state we must contribute to the welfare of all.
   (c) Most religions teach us to help our neighbor and honor the aged.

32. "Why should Negroes be allowed to go to school with 'Whites'?"
   (a) A Supreme Court opinion requires it.
   (b) Segregated schools contributed to racial hatred and discrimination.
   (c) God created all people equal.

33. "Why is divorce 'bad'?"
   (a) Because it is so hard on the kids.
   (b) A marriage involves a promise to God to remain married "till death us do part."
   (c) It is not bad. It is necessary under many circumstances.

34. "When we were younger teacher always read the Bible to us in the morning, Why don't you?"
   (a) Because it is now against the law.
   (b) I will if all of your parents write a note asking me to do so.
   (c) When you were younger you needed the lessons taught by the Bible more than you do now.

35. "Why does Cuba hate us?"
   (a) Because they believe the preaching of their Communist leaders.
   (b) American big businessmen stole all of the profits before Castro "liberated" the Cuban people.
   (c) America dominated the country as a domineering conqueror.

36. "Why do we have to study music?"
   (a) Even though you never become a musician, an appreciation of music will bring happiness
and joy to you in the future.

(b) For the same reason that you study other subjects. It's just as important.

(c) Who knows what the future may bring. You may change your mind and become a musician.

37. "What causes the tide?"
   (a) The gravitational pull of the moon upon the water on the side of the earth nearest the moon.
   (b) The cosmic attraction of the sun and the earth.
   (c) God established a pattern of phenomena in the seas, the air, and living things. The tide is a manifestation of this pattern.

38. "Do you think teachers should smoke?"
   (a) Teachers are human beings and have just as much right to smoke when they are off-duty as your parents.
   (b) No. They set a bad moral example for their students.
   (c) No. Smoking is a dirty, expensive habit which may cause a serious disease such as cancer.

39. "It isn't fair. If a boy is old enough to go into the Army, he should be allowed to drink if he wants to. Why can't he?"
   (a) He is a minor. Minors are children under the law.
   (b) Alcohol is more harmful to growing tissues than to mature tissues of the human body.
   (c) Drinking is sinful. Nobody should drink.

40. "Why can't we learn to be cosmetologists in high school?"
   (a) You should receive a broad education in high school. There is too much specialization as it is.
   (b) An excellent idea! Let's check further.
   (c) Ridiculous. We have more beauticians than we need now.

41. "Why don't ants make honey like bees do?"
   (a) Wow! That's a good question.
   (b) If God had intended ants to make honey, they would make honey. Obviously, He created them different.
   (c) The anatomy of the ant enables it to produce a substance which the ants use much like the bees do. Man doesn't like the taste so it is not considered a food.

42. "Why is my baby sister so little?"
   (a) All baby animals are smaller than their parents because that is natural.
   (b) She had to be very small when she was born because she was inside of your mother until then.
   (c) This is a question to ask your mother. She'll tell you.
43. "Why did you say that black is not a color?"
   (a) Because it isn't. Take my word for it!
   (b) It is called black to designate the lack of color.
   (c) When light strikes an object, colors reflect from the object. Things that look black absorb all of the light and do not reflect any.

44. "Is God a ghost?"
   (a) There are no such things as ghosts so He can't be a ghost.
   (b) Yes, He is. He is the Holy Ghost, an ever-present Spirit.
   (c) There is no concrete evidence that either God or ghosts exist.

45. "Why am I in this class?" Am I too dumb to go to regular classes?"
   (a) Yes.
   (b) You know that you have trouble with your schoolwork. This class will help you more than the other classes would.
   (c) Maybe if you work real hard you can show that you belong in a regular class.
XI. APPENDIX C

TEACHER ATTITUDE INVENTORY

BY

R. J. VANDEN BRANDEN

DES. MOINES, IOWA
MARCH 1965
The series of questions included in the inventory are questions which might be asked in any classroom. They are posed as specific questions as a student might ask them. Usually such questions are unexpected and require a spontaneous, unplanned answer or action by the teacher. Presumably, in a classroom situation some answers might be deferred to a later time, but in this inventory you are asked to select the answer or action which you believe would most suitably answer the question in each case. There are no right or wrong answers.

Please fill in all of the requested information blanks before beginning the inventory. Proceed at your own speed after carefully reading the instructions on the answer sheet.
1. "Why do we have to go to school?"
   (a) The law says that you must.
   (b) God created us with an intellect. It would be sinful to not learn as much as we can.
   (c) Adults want you to learn as much as possible to prepare you for a job.

2. "Why would salt ruin our lawn?"
   (a) It causes the water to leave the root cells of the grass.
   (b) It smothers the grass.
   (c) It would make the soil too acidic.

3. "Where did we come from?"
   (a) God created us.
   (b) There is some evidence that evolution has played a part in man's development, but how he first came to be is best explained by the Bible.
   (c) Man developed from early life forms.

4. "Why is a rock different from a bone?"
   (a) The rock has never been alive.
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   (a) Your mother is entitled to her opinion, but it is an excellent example of a style which I insist that you study. You will read it or take a lower grade.
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   (c) Class, maybe it is unsuitable. Let's turn to pg. 66 and read a different story.

6. "All of the kids say that there is no Santa Claus. I know you always tell the truth. Is there a Santa Claus?"
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   (a) It is a wavelength of light.
   (b) It is a pigment present in the object.
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21. "What is the most important ingredient of success?"
   (a) Enthusiasm
   (b) Intelligence
   (c) "Hard work"

22. "What is success?"
   (a) Wealth
   (b) Prestige
   (c) Power

23. "What is the difference between a bolt and screw?"
   (a) A screw is pointed.
   (b) A bolt has smaller threads.
   (c) Neither of the above. It depends upon how they are used.

24. "Why doesn't our government own the railroads?"
   (a) It should not operate in private enterprise.
   (b) It will if the railroads keep reducing their schedules.
   (c) It has no right to do so without legal cause.

25. "What is communism?"
   (a) I'm sorry, but I can't explain it to you.
   (b) An economic religion preaching democracy's downfall.
   (c) An economic system stressing common ownership.
26. "What is life?"
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TEACHER ATTITUDE INVENTORY

NAME ___________________________ DATE ________________________
Print Last First Initial

HOME _______________________________________________________
ADDRESS City County State M or F

MARITAL ___________________________ RELIGIOUS ___________________________ TEACHING ___________________________
STATUS M, S, or D PREFERENCE ___________________________ PREPARATION Area of Concentration ___________________________

PRACTICE ___________________________ GRADE ___________________________
TEACHING Grade Name of School City POINT Ave. to 2 Places

DIRECTIONS: Place a 1 in the column representing your choice of the best answer or action to each question. Place a 2 in the column representing your choice of the second best answer or action to each question. Place a 3 in the column representing your choice of the poorest answer.

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XIII. APPENDIX E

TEACHER ATTITUDE INVENTORY

Instructions to Administrator of Inventory

The Inventory is designed to be informative to the testee insofar as the questions which are posed have been asked or could have been asked by students in actual classroom situations. They invariably "pop up" at an inopportune moment. Possibly the new teachers will be a little more prepared when the situation first appears in an actual teaching situation. Please emphasize to the testees that they are to pretend they are teaching a class in their favorite subject or grade level as they face each question. Their first reaction when they read the choice of answers is very desirable as there are no right or wrong answers.

Individual scores are not significant to the study. No judgments as to whether an individual is suitable or unsuitable to become a teacher is intended or implied. The group scores may show a trend as to the responses which are selected. At least, we hope this will be the case.

The testee may inquire about the results of his inventory at a later date if he so desires. All individual results will be confidential.

Be sure to emphasize the directions on the answer sheet. The testee is to mark his first, second, and third choice for each question. A "1" is marked in the letter column representing his first choice of an answer, a "2" is marked in the letter column representing his second choice, and a "3" is marked in the remaining letter column.
In this section you are asked to respond to a series of hypothetical situations with which you might be confronted in the classroom. We are primarily concerned with your first impressions—your immediate reaction to the situations. Please assume also that you must deal with each problem in some specific manner, i.e., do not reply in terms of "I would ignore the question," or "I would change the subject," or "Why don't you look it up in the encyclopedia?", etc. For the purposes of this test we want you to assume that you are "on the spot"—you must not evade the issue—you must come to grips with each problem.

Remember too that we are asking you to reply as elementary school teachers rather than as teachers at a specific grade. Therefore respond to all questions even though the situation described might not normally occur at your grade level.

Remember to jot your first impressions down quickly in a brief paragraph or two or even in a few key sentences. You will be limited to two minutes for each problem situation.

Your class is discussing the possible sale of American wheat to Russia in their current events lesson. The class seems to be generally in favor of the sale. Then one child says, "I don't know why we should help them. Everybody knows they're our enemies!" Your response might be.....

When the class comes back from the gym period, one child discovers some money missing from his desk. He loudly accuses another child of stealing, but the money is found on the floor near its owner's desk, presumably where he accidentally dropped it. Your response might be.....

You have always tried to encourage your children to discuss really significant news items during your current events class. Three or four children persist in bringing in "gory" stories of murders and holdups, however. One of them says that if these stories weren't important, the papers wouldn't give them so much space. Your response might be.....
One morning the children come to school with the knowledge that a classmate, who had been hospitalized, had died. You and the children are grieved by the loss of this child, and during a discussion of what the class might do to help, a child wants to know why we have to die. Your response might be.....

In order to get to know your new class more quickly, you ask them to write a theme on their summer activities. One child candidly admits he stole some candy from a store. When you question him privately about this, he says that it was all right because he gave it to his little sister. Your response might be.....

The class has come to school one morning after having studied for an important test. They seem excited and nervous. One child seems more nervous than the rest. During the test you see this child looking at a neighbor's paper. You discuss this with the child after school, and she explains that she simply didn't have time to prepare for the test; she had promised her best friend that she would sleep overnight at her house and couldn't break her promise. Your response might be.....

During a lesson on the study of early man, the children are asked to answer the question of where man originated. The science book from which the lesson was taken stresses the evolution of man from the lower forms of life. One child wants to know where the simplest creatures (from which the others evolved) came from. Your response might be.....

A group of primary grade children are playing a game outdoors. Suddenly one child bursts into tears. He tells you that Johnny called him "stupid". This is the third time in the last two weeks that this has happened. Your response might be.....
After realizing many of your children do not really know the Pledge of Allegiance, you decide to go through each phrase and discuss it. During the discussion one child asks why the phrase "one nation under God" was added to the Pledge. Your response might be.....

A new child enters your class at mid-year. In order to help get him acquainted you place him on a committee of five which is responsible for planning the class' Halloween party. Later that day the original members of the committee come to you and complain that they don't want this child on their committee—they feel they can do a better job without him. Your response might be.....

As an object lesson on stealing, you read a story about a child who stole a knife from a department store. Soon afterwards, struck with a pang of conscience, he throws away the knife. During the discussion which followed the story, a number of children express the opinion that since he realized he had done something wrong and had thrown the knife away, the child was relieved of his responsibility. Your response might be.....

In a discussion of Russia in social studies, one child says that communists are no good because they don't believe in God. "They will never beat us", she says, "because God is on our side." Your response might be.....

Your school has decided to participate in the UNICEF Halloween fund raising drive this year. At one of your planning sessions you discuss with your class the importance of UNICEF and the U.N. in general. One child says that he can't work on the drive—his father thinks it's unpatriotic to help the U.N. Your response might be.....
During a discussion of recent successful space launchings one child wonders if God will get angry if we "keep pushing closer to heaven." Your response might be.....
May 6, 1965
Ames, Iowa

All Pre-service Teachers
William Penn College
Oskaloosa, Iowa

Dear Teacher:

Dean Schultze has given permission to administer the enclosed inventory to all pre-service teachers at William Penn College.

I have administered the inventory to all of the seniors in Dr. White's seminar group. Dr. Schultze has suggested that the best way to reach you is by mail.

Would you please help me by answering the questions in the inventory and return the answer sheet in the enclosed envelope? This constitutes a very important part of my Ph.D. dissertation at Iowa State University. I would appreciate your cooperation very much.

Sincerely,

R. J. Vanden Branden
XVI. APPENDIX H

TEACHER PANEL

Mrs. Betty Schroeder
Kindergarten
Dows, Iowa

Miss Edna H. Dontje
Elementary mathematics
Webster City, Iowa

Mrs. Charlotte Rockow
First grade
Kanawha, Iowa

Mr. Everett Bell
Junior high science
Des Moines, Iowa

Mrs. Mildred Williams
Second grade
Clarion, Iowa

Mr. James Jacobson
Junior high social studies
Des Moines, Iowa

Mrs. Jeanette C. Smithson
Third grade
Clarion, Iowa

Mr. Donald Taylor
Junior high social studies
Des Moines, Iowa

Mrs. Nina R. Heathershaw
Fourth grade
English and spelling
Clarion, Iowa

Mr. Lowell Lockridge
Science department head
High school chemistry
Des Moines, Iowa

Mrs. A. Edna Jaycox
Fourth grade
Webster City, Iowa

Mr. Ray Pugh
High school coach
Des Moines, Iowa

Mrs. Alice C. Abbas
Fifth grade
Kanawha, Iowa

Mr. Michael Spicer
High school social studies
Des Moines, Iowa

Mrs. Dorothy B. Luiken
Sixth grade
Webster City, Iowa

Mr. John Warren
High school special education
Des Moines, Iowa
The Pearson product-moment coefficient of correlation was obtained by the solving of the formula

$$r_{xy} = \frac{\Sigma xy}{N \sigma_x \sigma_y}$$

where

- $r_{xy} =$ coefficient of correlation
- $\Sigma xy =$ sum of the products of the paired scores expressed in deviation form
- $N =$ number of cases
- $\sigma_x =$ standard deviation in one distribution
- $\sigma_y =$ standard deviation in another distribution