

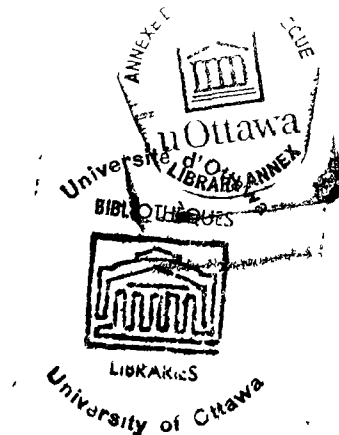
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STUDENT-TEACHER IDENTIFICATION AND
ACADEMIC ACHIEVEMENT

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Psychology and Education of the
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INTRODUCTION

This study is concerned with investigating the relationship which might exist between an identification formed by high school students with their teacher and achievement attained by the students in the course of study conducted by the teacher. The primary purpose of the study is to determine whether or not identification is a factor sufficiently important to be considered an aid to the student in his attempt to master subject matter presented in the classroom.

It is hypothesized that if adolescents form partial identifications with models as they search for an identity of their own, as has been suggested by Erikson and Allport, they might choose one or several teachers as models and, as a result, acquire certain characteristics of the model or models, leading to better achievement in the course of study conducted by the model than if no identification occurred.

Empirical observation has indicated that some students seem to have difficulty in paying attention to the presentation of subject matter in the classrooms of certain teachers whereas they apparently have no difficulty with respect to other teachers. In the situations where they have the above-mentioned difficulty they usually achieve poorly whereas in the situations where they experience no such difficulty they indicate a better acquisition of subject matter by their

performance in examinations. It was considered worthwhile to investigate whether identification with the teacher, assumed as a source of the students' ease in acquiring subject matter, really represents a significant influence in the mastery of subject matter for high school students generally.

The study is not concerned with differentiating among the causes of identification nor with the type of identification as proposed by many authors who have concerned themselves with the phenomenon of identification. It is not concerned with any specific characteristic of personality in which the student perceived a similarity existing between himself and the teacher with respect to the evaluative, active or potential factors of personality.

Semantic differential scales as used by Lazowick as a quantitative measure of identification are used in this study. The students used these scales to generate profiles representing the concept they had of themselves and the concept they had of their teachers. The degree of similarity between the profiles became the measure of identification since, if the student identified with the teacher, he did so with the image of the teacher as the student perceived him.

Because the largest number of students reported as having some difficulty with one teacher and not with another are from the sophomore and junior classes, the subjects chosen for this study are 123 sophomores and 82 juniors. These

subjects comprised all the students of the sophomore and junior classes who were enrolled in the college preparatory course in the high school at which the study was conducted. The use of sophomores and juniors was made because these students were considered to be at an age when they might be expected to identify with models other than their fathers.¹

Since it was observed that of the students who seemed to have difficulty with one teacher, there were few who seemed to have difficulty with all teachers. Besides, some had difficulty with one teacher and others with another teacher. Therefore it was decided to investigate the relationship between identification of the student with teacher and achievement in four different areas. Accordingly, each student was asked to generate a profile for the concept representing himself and for concepts representing each of four of his teachers.

The diocesan examinations in the various courses considered are used as measures of achievement. Because the examinations are based on the diocesan syllabi followed by the teachers, these examinations are considered to be appropriate measures of achievement for the courses involved in this study.

¹ Gordon W. Allport, Pattern and Growth of Personality, New York, Holt, Rinehart and Winston, 1961, p. 125.

Eight null hypotheses are used to investigate the relationship between identification and achievement. They deal with identification of student with teacher and achievement in four areas each for sophomores and juniors. For the sophomores the areas are Religion, English, Latin and Biology. For the juniors they are Religion, English, History and Chemistry.

The study is conducted according to the following outline:

The first chapter begins with a background of the study explaining the reasons for undertaking it. A statement of the problem is proposed and is stated in terms of a general null hypothesis, followed by eight sub-hypotheses each dealing with one of the eight areas treated. The problem is explained further by mentioning the features of identification not considered. A review of the literature dealing with the phenomenon of identification completes the chapter.

In the second chapter the design followed in the study is presented. It describes at length the tools used to measure identification and achievement, the subjects involved in the study together with the procedure for grouping the subjects into various academic sections and, finally, the procedure followed in testing the relationship between identification and achievement.

In the third chapter a report is given of the results of the measures of identification and achievement together with the results of the testing of the various hypotheses by use of Pearson product-moment correlation coefficients. An analysis also is made of the results obtained by measuring identification and achievement and by testing the various hypotheses. This analysis considers each of the sections separately and then all of the sections as a combined group. This procedure is followed with respect to each of the four areas treated. The sophomore sections are treated first and then the junior sections are treated.

The final chapter reports the conclusions drawn from the data. An explanation of the conclusions follows with some speculation as to the possible reasons for the results which led to the conclusions.

The conclusions are followed by recommendations for further study of the possible influence of the phenomenon of identification with the teacher on achievement in the course conducted by the teacher.

CHAPTER I

BACKGROUND OF THE STUDY

1. Background.

The present study is the result of a continuing problem frequently observed by guidance counselors in a diocesan high school in the Philadelphia system. Some teachers reported that certain students, by their classroom behavior, indicated that they had difficulty in paying attention to the presentation of subject-matter in the classroom and, as a result, were obtaining poor marks in their examinations in that subject. Other teachers reported the same problem, but the students having difficulty were not the aforementioned ones. The students, when interviewed, readily admitted that they had the difficulty reported by the teacher.

Some students offered possible reasons for their lack of success other than that they had no great interest in the subject-matter. Most of these reasons centered about the teacher's classroom behavior including especially his attitude toward the particular student or his methods of presentation. Whether the reason given was valid or not, the student did report a problem of interpersonal relations with the teacher.

The general observation was that students reacted in different ways to their various teachers. One student would be favorably influenced by a certain teacher and as a result

have no difficulty paying attention in that teacher's class. His ease in accepting the presentation of the subject-matter was reflected in his success in examinations. Yet he would have an opposite experience with another teacher. Another student would be very successful in the latter teacher's class, but would experience difficulty with the former teacher.

The fact that one student would react in different ways to his various teachers while another student, also reacting in different ways, would have almost opposite reactions has led to the question whether the key to this differential behavior lay in the developmental process experienced by these students as they proceed toward maturity.

Some authors report that the outstanding characteristic of adolescence is a renewed search for identity.^{1,2} The contention of these authors is that the childhood identifications with the family and later with the gang have lost their usefulness. The adolescent has an acute need to find his unique identity. In the process he tends to reject the family. But he is not a secure autonomous self. In order to overcome his feeling of insecurity he forms partial identifications, first with one hero, then with another. If this

1 Erik H. Erikson, "Identity and the Life Cycle", in Psychological Issues, New York, International Universities Press, 1959, p. 110-113.

2 Gordon W. Allport, Pattern and Growth of Personality, New York, Holt Rinehard and Winston, 1961, p. 124-126.

theory is correct then one or several of his teachers can become models with whom the student identifies temporarily.

The term "identification" has been widely used in the literature of psychoanalysis, psychology and sociology with many varying meanings and shades of meanings. Symonds gives the most common use of the term as "modeling oneself in thought, feeling or action after another person".³ All who treat of the phenomenon seem to agree on the following characteristics of it: (a) there are a subject and a model involved in the process; (b) the subject tends to acquire certain characteristics of the model of identification; (c) this tendency seems to be the result of a need. Moreover, all seem to avoid calling identification a clearly conscious process.

Since the subject tends to acquire certain characteristics of the model he has learned something. An instrument used to measure the degree of identification between subject and model would then be one which would take into consideration what is learned. Lazowick used Osgood's semantic differential scales to measure the degree of identification between his subjects and their parents.⁴ He theorized that meanings

³ Percival M. Symonds, The Dynamics of Human Adjustment, Appleton-Century-Crofts, New York, 1946, p. 318.

⁴ Lionel M. Lazowick, "On the Nature of Identification", in Journal of Abnormal and Social Psychology, Vol. 51, 1955, p. 176-177.

were learned, leading to similarity of frames of reference between subject and model and, therefore, to similarity of behavior. On the basis of Lazowick's reasoning, the semantic differential scales were adapted for this study. If in the process of identification, the subject acquired meanings similar to those of the model it could be expected that the student, in forming an identification with the teacher, would take as his own, the values and attitudes of his model. Then it could be expected that the student would be successful in mastering the subject-matter taught by the model in relation to the degree of his identification with the model.

Male high school sophomores and juniors enrolled in the college preparatory course were chosen as subjects because the largest number of students reported to the counselors as having the above-mentioned difficulty with individual teachers were from the sophomore and junior classes.

2. Statement of the Problem.

The primary purpose of the study was to investigate the relationship, if any, between identification of students and their teachers and achievement in the subjects taught by those teachers. Identification was measured by semantic differential scales. Achievement was measured by raw scores attained in Philadelphia diocesan examinations which were based on the syllabi for the various subjects.

The following general null hypothesis was to be tested:

There is no significant relationship between identification scores obtained on the semantic differential scales and achievement scores obtained in a Philadelphia Diocesan Examination of male high school college preparatory students.

Sub-hypotheses:

- (a) There is no significant relationship between identification scores obtained on the semantic differential scales with respect to the concept "my Religion teacher" and achievement as measured by the Philadelphia Diocesan Religion Examination for high school sophomores.
- (b) There is no significant relationship between identification scores obtained on the semantic differential scales with respect to the concept "my English teacher" and achievement as measured by the Philadelphia Diocesan English Grammar and Usage Examination for high school sophomores.
- (c) There is no significant relationship between identification scores obtained on the semantic differential scales with respect to the concept "my Latin teacher" and achievement as measured by the Philadelphia Diocesan Latin Examination for high school sophomores.
- (d) There is no significant relationship between identification scores obtained on the semantic differential scales with respect to the concept "my Biology teacher" and achievement as measured by the Philadelphia Diocesan Biology Examination.
- (e) There is no significant relationship between identification scores obtained on the semantic differential scales with respect to the concept "my Religion teacher" and achievement as measured by the Philadelphia Diocesan Religion Examination for high school juniors.
- (f) There is no significant relationship between identification scores obtained on the semantic differential scales with respect to the concept

"my English teacher" and achievement as measured by the Philadelphia Diocesan English Grammar and Usage Examination for high school juniors.

- (g) There is no significant relationship between identification scores obtained on the semantic differential scales with respect to the concept "my History teacher" and achievement as measured by the Philadelphia Diocesan United States and Pennsylvania History Examination.
- (h) There is no significant relationship between identification scores obtained on the semantic differential scales with respect to the concept "my Chemistry teacher" and achievement as measured by the Philadelphia Diocesan Chemistry Examination.

The following definitions were used in the study:

Identification (theoretical definition): the relation between the subject's set of meanings (subsets of behavior imitated from the model) and the model's own set of meanings as perceived by the subject.⁵

Identification (operational definition): D value, a measure of semantic similarity between profiles of the subject's concept of himself and his concept of an individual teacher.

Meaning (in relation to learning theory): a representational mediation process which it (the sign of a significate) elicits.⁶

Meaning (operational definition): that point in semantic space specified by a series of differentiating judgments.⁷

Achievement: the attained ability to perform school tasks.⁸

5 Lazowick, Op. Cit., p. 176.

6 Charles E. Osgood, George J. Suci, and Percy H. Tannenbaum, The Measurement of Meaning, Urbana, University of Illinois Press, 1957, p. 26.

7 Ibid., p. 26.

8 Horace B. English and Ava Champney English, A Comprehensive Dictionary of Psychological and Psychoanalytical Terms, New York, Longmans, Green, 1958, p. 6.

The purpose of this study, as previously mentioned, was to investigate the possible relationships between identifications which students might form with teachers and the students' success in mastery of subject-matter taught by the teacher. The reasoning which led to the present problem was that a possible cause of difficulty encountered by some high school students which interfered with their acquisition of competence in subject-matter in a particular class might be due to their non-identification with the teacher. Because the students were adolescents identification or non-identification with the teacher might be an important factor helping or hindering the student in accomplishing his work.

This study was concentrated on the question of individual identification of student with teacher. The concept of group identification was completely excluded. Each student as an individual was instructed to assess himself using semantic differential scales and, using the same scales, to assess, as he perceived him, each of his teachers whose course was involved in the study.

All the students and teachers were males. Therefore, sex-role identification, a very important process especially during childhood, was not a part of this study.

In accordance with Erikson's theorizing that adolescents form identifications with appropriate models mostly by reason

of their feelings of insecurity,⁹ this study is not concerned with differentiating among other causes of identification. No attempt was made to distinguish between anaclitic identification¹⁰ and identification with the aggressor,¹¹ nor between developmental and defensive identification¹². Nor was the study concerned with distinguishing between emotional and behavioral identification, as Stokes¹³ suggests.

The semantic differential scales were used in a manner similar to that used by Lazowick in the previously cited study on identification. But whereas he used two measures of identification, "real" identification (similarity of profiles for the concept "myself" constructed by both subject and model) and "inferred" identification (similarity of profiles for the concept "myself" and for the model as perceived by the subject), this study, in agreement with the

9 Erikson, Op. Cit., p. 112.

10 Urie Bronfenbrenner, "Freudian Theories of Identification and Their Derivatives", in Child Development, Vol. 31, 1960, p. 16.

11 Anna Freud, The Ego and the Mechanisms of Defense, London, Hogarth Press and the Institute of Psycho-Analysis, 1937, p. 118-120.

12 O. Hobart Mowrer, Learning Theory and Personality Dynamics, New York, Ronald, 1950, p.

13 Stuart M. Stokes, "An Inquiry into the Concept of Identification", in Journal of Genetic Psychology, Vol. 76, 1950, p. 166.

the reasoning of Sopchak¹⁴ and Helper¹⁵ that the subject can form an identification only with the image of the model as he perceives that model, is restricted to the use of what Lazowick named "inferred" identification.

Winter's study involving the comparison of similarities in values between student and teacher with academic achievement in a college Psychology class¹⁶ is similar to the present study. The two differ in that Winter used only polar adjectives loaded in the evaluation factor of the semantic differential, whereas the present study has endeavored to establish identification by making use of the three factors considered significant in the same semantic differential scales.

In his study Winter pointed to the fact that although many years of effort had gone into refining intelligence and aptitude tests the average correlation between the results of these tests and actual achievement as measured by the marks received for school performance averaged only .50. There is

¹⁴ Andrew L. Sopchak, "Parental 'Identification' and 'Tendencies toward Disorders' as Measured by the Minnesota Multiphasic Personality Inventory", in Journal of Abnormal and Social Psychology, Vol. 47, 1952, p. 160.

¹⁵ Malcolm H. Helper, "Learning Theory and the Self-Concept", in Journal of Abnormal and Social Psychology, Vol. 51, 1955, p. 188.

¹⁶ William D. Winter, "Values and Achievement in a Freshman Psychology Course", in Journal of Educational Research, Vol. 54, 1961, p. 183.

no doubt that the abilities measured by intelligence and aptitude tests have an influence on achievement, but evidently there are other factors involved.

In testing the relation of similarities of values between student and teacher to school performance Winter found a significant correlation. As Martin has stated explicitly¹⁷ and Lazowick implicitly,¹⁸ the values of the model are acquired by the subject when identification takes place. Although the acquisition of values is predominant, there are other factors to be considered. If identification is modeling oneself in feelings and action as well as thought, then Lazowick's contention (that in identification meanings are learned, including the dynamic factors of potency and activity as well as the evaluative factor) would give a more inclusive basis for the behavioral results of identification than would a theory that values alone are learned. In any event, the outstanding factors of the meanings of the concepts can be tested separately to learn whether any of them has more or less influence on achievement than does the complete meaning itself.

17 William E. Martin, "Learning Theory and Identification: III The Development of Values in Children", in The Journal of Genetic Psychology, Vol. 84, 1954, p. 212.

18 Lazowick, Op. Cit., p. 177.

The phenomenon of identification is widely accepted as being important as a means used by children and adolescents for personality development. It is recognized as a prominent feature in interpersonal relationships, with learning taking place on the part of the subject.

An experimental testing of the theory that the student's identification with the teacher has an influence on the student's academic achievement can provide a means of estimating whether or not the theory is correct, thus shedding light on the importance (or lack of importance) of identification as a factor influencing academic achievement.

The statement of the problem to be studied is now completed. A review of the literature related to theories and previous empirical studies dealing with the concepts involved follows.

3. Review of the Literature.

The term "identification" has been used by many authors to mean many things. Sigmund Freud is universally credited with having recognized and named this phenomenon.

Bronfenbrenner¹⁹ has performed a monumental work of tracing Freud's references to and explanations of identification in all his (Freud's) published works. In Bronfenbrenner's words:²

¹⁹ Bronfenbrenner, Op. Cit., p. 15-40.

²⁰ Ibid., p. 15.

The task proved a most difficult one on several counts. First, although current theory in this sphere derives almost exclusively from the work of one man - Sigmund Freud, the references to the topic are scattered passim through numerous books and papers written over half a life-time. Second, when one finally views Freud's writings on the subject as a whole, it becomes abundantly clear that he often uses the same terms to refer to what are basically quite different concepts. Third, the above confusion becomes still more confounded in the later developments and modifications of Freud's theories by contemporary writers, who typically apply the same terminology in still other ways and introduce new names for concepts and processes discussed by Freud himself.

Bronfenbrenner traced Freud's recognition of identification from the first published reference to the Oedipal conflict (in The Interpretation of Dreams, 1900); through his reference to anaclitic object choice without mentioning identification by name (in "On Narcissism: an Introduction", 1914); his introduction of the term itself (in "Mourning and Melancholia", 1917); his definition of identification and his first reference to it as a mechanism used in resolving the Oedipus complex (in Group Psychology and the Analysis of the Ego, 1921); his stressing the threat of a punitive father as a motive (in boys) for solution of the Oedipus complex through identification with the father (in "The Passing of the Oedipus Complex", 1924); finally, his attempt (unsatisfactory to Freud) to explain the Oedipus complex in girls (in the previously mentioned Group Psychology and the Analysis of the Ego and in "Some Psychological Consequences of the Anatomical Distinction between the Sexes", 1925).

Bronfenbrenner claimed that Freud did not add anything new to his theory of identification in his later writings but that he was careful to recognize that there could be two motives for a boy's forming an identification with his father, viz., anaclitic (fear of losing a loved parent) and aggressive (fear of the threat of castration). In addition, in his later writings Freud took pains to make clear that the model for identification was not the immediate image of the parent, but the ideal standard representing his aspirations rather than his actual behavior.

According to Bronfenbrenner there is only one constant feature present in all of Freud's references to identification, "an emotional tie with an object", but that Freud's concept of the nature of the emotional tie shifted as the years passed.

In his summarizing an estimation of Freud's use of the term identification, Bronfenbrenner confessed that he had difficulty. To his mind Freud had formulated not a theory, but theories which were not always consistent with each other. This problem was due partly to the fact that the views as stated by Freud were ambiguous, partly to the fact that they had changed over the years. He decided to treat them as alternate formulations.

Most often (as in the treatment of the Oedipus complex) Freud treated identification as a process - "the

sequential interplay of forces internal and external which impel the child to take on the characteristics of the parent".²¹ In this sense, anaclitic identification and aggressive identification are viewed as alternative developmental mechanisms derived from Freud's theory.

At times, however, Freud used the term to mean the product of the process - 'the resultant similarity in the characteristics of the child and the model'.²²

Bronfenbrenner then asks what aspects of the model are emulated by the child. Sometimes it was overt behavior as in the case of the boy who was reported by Freud, in Group Psychology and the Analysis of the Ego, as walking on all fours and refusing to eat at table, insisting that he was the kitten which he had lost. At other times Freud indicated that "identification endeavors to mold a person's own ego after the fashion of the one that has been taken as a model."²³ In this case, Bronfenbrenner infers, the motives as well as the overt behavior of the model are internalized.

Bronfenbrenner observed that Freud, in his later writings, saw the child as identifying with the parent's

²¹ Ibid., p. 22.

²² Ibid., p. 22.

²³ Sigmund Freud, Group Psychology and the Analysis of the Ego, tr. James Strachey, New York, Bantam Books, 1960, p. 47.

superego rather than the actual ego. There are, then, three aspects of the parent which the child may emulate: the parent's overt behavior, his motives, or his aspirations for the child. With which aspect the child identifies seemed to Bronfenbrenner an empirical question, although it seems that the child probably identifies with some characteristics of all three aspects. Another question would concern the influence of anaclitic as opposed to aggressive identification. He was of the opinion that the anclitic process may produce in the child the standards of the parent, whereas identification with the aggressor may produce the motives and behavior of the parent.

While Bronfenbrenner's article sought mainly to clarify Freud's meaning of the term "identification", an article by Stoke²⁴ sought to evaluate the Freudian theory relative to the phenomenon. Stoke agreed with Freud concerning the meaning of the term. As he said:

From the wealth of context in which the term is used it is usually implied that a child gives its emotional allegiance to one of its parents and attempts to duplicate in its own life the ideals, attitudes and behavior of the parent with whom it is identifying.²⁵

However, as to the reasons given for the causality of identification by Freud, he was completely in disagreement. He rejected the Oedipus complex as a cause for the following reasons:

²⁴ Stoke, Op. Cit., p. 163-189.

²⁵ Ibid., p. 163.

[...] the Oedipus complex is not scientifically verifiable, is inconsistent in its application to boys and girls, fails to account for differences as well as similarities between generations, does not explain discrepancies between emotional and behavioral aspects of identification which exist in numerous cases, emphasizes organic causes of identification to the virtual exclusion of others, and is not very useful in child guidance.²⁶

Stoke refused to accept as a fact the causation of identification by the Oedipus complex because the source of Freud's conclusion in favor of the Oedipus complex was based on the testimony of neurotic patients (whose ability to recall the past is considered suspect by psychoanalysts) and the fact that normal adults cannot recall any Oedipal conflict (which fact Freud, according to Stoke, explained as a complete repression which enabled these people to be normal).

The inconsistencies between boys and girls relative to the Oedipus complex were recognized by Freud, who still introduced a kind of fear as a means of facing the girls' identification with their mothers. Stoke was willing to admit that fear plays a part in maintaining the superego or ego-ideal provided the fear is one of loss of a loved parent or a fear of punishment, but certainly not fear of castration.

Stoke's contention that there are differences as well as similarities between generations was well illustrated by examples. He accused Freud of ignoring the differences.

²⁶ Ibid.

Stoke insisted that the differences between emotional and behavioral identification were very important for understanding identification. From a number of case studies of children Stoke arrived at the following conclusions: (1) that emotional identification seems to produce the attempt (or at least the desire) for behavioral identification; (2) that lack of emotional identification leads to no attempt at behavioral identification, while in fact, rejection of emotional identification often leads to an attempt to avoid behavioral identification; (3) success in regard to behavioral identification depends on the child's ability to adopt the role; and (4) temperamental similarities sometimes tend to produce behavioral identification, whereas dissimilarities tend to produce unlike behavior. The fourth conclusion seems to be true whether emotional identification is true or not. Stoke claimed that the Oedipus complex does not account for these differences.

Stoke based his contention that Freud considered identification and the resultant formation of the superego or ego-ideal to be organically determined on a quotation from Freud's own work (The Ego and the Id). This he rejected, proposing that there are at least ten factors influencing the formation of an identification. There are: (1) the pre-disposition to some forms of behavior which the biological fact of sex influences; (2) social pressures leading children

to identify with their own sex; (3) the amount of affection given to the child by the model; (4) the amount of gratification of the child's needs accorded by the model; (5) the degree of acquaintance the child has with the model; (6) the clarity of the model's role; (7) the attitude of influential persons to the model; (8) the capacity of the child to be like the model; (9) the temperament of the child in relation to that of the model; and (10) the existence of strong needs on the part of the child which coincide or conflict with the requirements of the model.

Stoke agreed with Freud that identification with persons other than parents would probably not be so strong as those formed with parents. Freud indicated that these later identifications were not related to the Oedipus complex and, since their motivating forces were not repressed into the unconscious, they were subject to recall to the conscious mind. Stoke claimed that the later identifications were subject to the ten factors mentioned above just as identification with parents was. However, he recognized that, since the parents generally would be better able to satisfy the child's needs, render affection and the like, identification with the parent would usually be stronger than later identifications.

Stoke rejected the Oedipus complex as the cause of identification and formation of the ego-ideal also on the

grounds that if it were true it would lead to a superego exactly like that of the parent. Ordinary observation proves this not to be the case. Rather, the maturing individual must modify his superego as conditions change. Stoke summed up his stand with: "The problem of the maturing individual is how he may modify it (his superego) without losing confidence in it."²⁷

This attack upon the Freudian theory concerning the acquisition of identifications has presented an alternate theory about their origin. It has provided reasons for recognizing partial identifications and the importance of identification with persons other than the parents in the development of values in the maturing individual.

With the first of the preceding two reports serving as a background for the explanation of the phenomenon of identification and the second as a representative opposed point of view as to the etiology of the phenomenon the review of related literature continues. Emphasis is now given to theories which explain causation of identification in terms of learning.

In examining the influence of punishment in the formation of an identification, Seward²⁸ compared the

²⁷ Ibid., p. 187.

²⁸ John P. Seward, "Learning Theory and Identification: II The Role of Punishment", in Journal of Genetic Psychology, Vol. 84, 1954, p. 201-210.

psychoanalytic viewpoint with that of learning theory. He found disagreement on Freudian theory's first premise: that identification is instinctive. He indicated that identification resulted from rewarded responses imitative of the model, whether the responses are self-rewarding, thereby providing a secondary reinforcement or are directly rewarded.

The influence of punishment and frustration of the psychoanalytic theory, he thought, should be qualified. If punishment is introduced too early the imitative responses will probably be inhibited, thus preventing identification. If punishment is too severe at a later stage the result may be stereotyped responses fixating the process at the cost of further growth. If punishment is relied on exclusively it may leave the child with a great number of inhibitions and no integrating values to bridge the gap. On the other hand, if the child is liberally rewarded for imitative responses at the beginning of the process, later disciplinary action by the model will not be traumatic and will not interfere with the development of the process.

Mowrer²⁹ did not attack Freud's theory with respect to causation of identification. Without affirming or denying Freud's explanation, he cast the phenomenon within the framework of a two-factor learning theory. Referring to his own

29 Mowrer, Op. Cit.

theory concerning the imitative behavior of talking birds, he said that the child is led to imitative behavior by the desire to reproduce bits of the beloved parent who satisfies the child's needs (developmental identification). For Mowrer this is a conditioning process whereby the child acquires behavioral identification. On the other hand, because he is punished for going contrary to the parents' standards of values, and because he is too dependent on the parent to be able to retreat from them, he solves his problem by internalizing their standards and values (defensive identification). He considered the latter activity to have more influence than the former in the formation of a superego or conscience.

The defensive identification is directed to the response side of the child, his behavior in general. In relation to the present study the explanation is pertinent, since Mowrer has explained learning in these terms:

What is learned are attitudes, meanings, or expectations which consist in token decrements in emotional tensions (secondary reinforcements or rewards) and token increments (secondary motivation, or punishment). It is assumed that it is these inner conscious factors which, moment by moment, select and shape overt action; and if we take this position we have ample provision for 'learning' without doing, i.e., for changes in behavior that occur solely and immediately, because the situation, or, more exactly, the individual's internal tension state, or 'field' has changed.³⁰

³⁰ O. Hobart Mowrer, "Ego Psychology, Cybernetics, and Learning Theory", in Learning Theory, Personality Theory and Clinical Research, New York, Wiley, 1954, p. 83.

As will be seen later, this was the theory of learning invoked by Lazowick in his identification study.

Sanford's³¹ criticism that Mowrer's two processes (developmental and defensive) are really developmental is not important here, since both processes seem to take place in the entire pattern of identification, so that the names given to them do not matter.

Kagan's research concerning the nature and attendant factors of identification sheds some light on the subject which is applicable to the present study.

After reviewing the definitions indicated by both psychoanalysts and psychologists oriented to learning theory, he offered his own definition:

Identification is defined as an acquired cognitive response within a person (S). The content of this response is that some of the attributes, motives, characteristics, and affective states of a model (M) are part of the S's psychological organization.³²

Kagan immediately qualified the term "cognitive response" by saying that he did not intend to imply that the content of the response was available to consciousness nor that it could easily be verbalized. He was also careful to add that identification was not to be taken as an all-or-

³¹ Nevitt Sanford, "The Dynamics of Identification", in Psychological Review, Vol. 62, 1955, p. 106.

³² Jerome Kagan, "The Concept of Identification", in Psychological Review, Vol. 65, 1958, p. 298.

none process; and that the subject could become identified, to varying degrees, with a variety of models.

It was his contention that "the motivation to command or experience desired goal states of a model is salient in the development and maintenance of an identification."³³ He mentioned, as two major goal states, mastery of the environment which the model commands, and love and affection.

The former goal-state, mastery of the environment, can be considered as mastery of the subject-matter in the present study. This can be motivation for temporary identification.

Kagan mentioned four assumptions on which the formation of identification would depend: (1) the subject perceives that the model possesses or commands certain goals and satisfactions which the subject desires; (2) the subject's desire to command the goal-states leads him to wish to possess certain characteristics of the model in the belief that his similarity to the model will result in a command of the desired goals; (3) the identification response is reinforced each time the subject perceives the similarity between himself and the model; and (4) in order that the identification be maintained the subject must experience some of the desired goal states.

³³ Ibid., p. 298.

The maintenance of identification beyond the time of the tests of achievement is not pertinent to the present study. However, the fourth assumption could form the basis for a hypothesis in a later study.

In concluding the review of the literature pertaining to the theory of identification, it is to be noted that the present study is related somewhat to Mowrer's theory of learning in that attitudes and meanings of the model are assumed to be internalized by the subject. It would be expected, then, that his overt behavior (in this case, mastery of subject-matter) would be in closer conformity to that of the teacher the closer he perceived himself as having these characteristics in common with the teacher. Also Kagan's assumptions that the subject perceives that the model possesses certain goals (mastery of subject-matter) and believes that he can obtain a similar mastery by emulating the model are recognized as possible motivating forces for the subject's forming an identification with the model.

Empirical studies dealing with identification have become numerous in recent years. While case studies have been used, e.g., those reported by Stoke in the article mentioned above, experiments have been designed to measure identification through the use of techniques geared to group testing. There has been a wide variety of instruments used, depending on the appropriateness of the instrument in

relation to the experimenter's theory and definition of identification and his hypotheses.

Gava and Raush³⁴ used the Blacky Pictures as a measure of disturbance in the area of identification and the Strong Vocational Interest Blank as a measure of perceived similarities between the subjects and their fathers.

Sopchak³⁵ and Beier and Ratzeburg³⁶ used questions from the Minnesota Multiphasic Personality Inventory (M.M.P.I.). Sopchak used this instrument to measure both identification and normality or abnormality. Beier and Ratzeburg used it as a measure of identification and of masculinity or femininity.

Helper³⁷ used forty-two pairs of polar opposite adjectives chosen from those found by Cattell to be most descriptive of the ten major factors which emerged from his factor analysis of personality ratings. Helper separated the polarized adjectives by a line broken into seven segments, following the format used by Osgood for the semantic differential.

³⁴ Esther Laden Gava and Harold L. Raush, "Identification and the Adolescent Boy's Perception of his Father", in Journal of Abnormal and Social Psychology, Vol. 47, 1952, p. 855-857.

³⁵ Sopchak, Op. Cit., p. 159-165.

³⁶ Ernst G. Beier and Fred Ratzeburg, "The Parental Identifications of Male and Female College Students", in Journal of Abnormal and Social Psychology, Vol. 48, 1953, p. 569-572.

³⁷ Helper, Op. Cit., p. 185-186.

Payne and Mussen³⁸ used a questionnaire consisting of fifty questions taken from the California Personality Inventory: 18 from the Tolerance Scale, 17 from the Social Participation Scale, and 15 from the Masculinity-Femininity Scale.

Some experimenters have devised their own questionnaires for the purpose of measuring perceived identification. Among these are Bray³⁹ and Bieri, Lobeck and Galinsky.⁴⁰

Bieri et al. and Crites⁴¹ used Osgood's semantic differential scales to measure indirect (Lazewick's "inferred") identification. Crites chose this instrument to measure the similarity between reaction patterns, attributes, ideals and values developed by the individual and those he perceives in his parents' behavior.

Some experimenters, e.g., Payne and Mussen, and Helper had both subject and model assess themselves on the

³⁸ Donald E. Payne and Paul H. Mussen, "Parent-Child Relations and Father Identification among Adolescent Boys", in Journal of Abnormal and Social Psychology, Vol. 52, 1956, p. 359.

³⁹ D.H. Bray, "Attributes of Ideal Persons and of the Self as Conceived by Some English Secondary School Children", in Journal of Experimental Education, Vol. 33, 1964, p. 93-97.

⁴⁰ James Bieri, Robin Lobeck and M. David Galinsky, "A Comparison of Direct, Indirect and Fantasy Measures of Identification", in Journal of Abnormal and Social Psychology, Vol. 58, 1959, p. 253-258.

⁴¹ James O. Crites, "Parental Identification in Relation to Vocational Interest Development", in Journal of Educational Psychology, Vol. 53, 1962, p. 262-270.

instrument. The degree of identification was rated by the similarity of the two scores. This is the so-called real identification. Others had the subject assess both himself and the model on the instrument. Again, the degree of identification was rated by similarity of the two scores. This was considered an inferred identification.

In the latter form there has been a difference in technique. In some of the studies the subjects were told first only to take the test, then to take the test as they guessed the model would take it. Cava and Raush and Sopchak used this method. In other cases, especially those using the semantic differential scales, the subject was told to rate the model on the same instrument. Thus, a measure was taken of the model as the subject perceived him.

Sopchak was insistent that the only true measure of identification could be a comparison between the subject's estimate of himself and his estimate of his image of the model. He said:

It should be pointed out that the identification score obtained by this method represents identification with the subject's 'image' of the person with whom he is identifying himself. A little thought will show, however, that this is the only type of identification which can exist. One can identify himself with another only by identifying himself with his image of the other person, because the subject can never know what the other person actually is.⁴²

⁴² Sopchak, Op. Cit., p. 160.

Although one cannot disagree with Soper's reasoning, other investigators, e.g., Lazowick and Helper, have used both real and inferred identification measures with practically the same results.

It is pointless to argue for or against the validity of the various instruments of identification or of any technique. One can justify his use of a particular instrument or of a particular technique only after he had defined identification, and stated and delineated his problem.

Bronfenbrenner⁴³ has called into question whether identification should be measured by comparing overt behavior of subject and model or by comparing patterns of similarity between the two. He suggested that a technique comparing profiles of subject and model be developed. The "D" score used for measuring similarities of concepts rated on the semantic differential scales has been developed for this purpose.

With the completion of the review of related literature, the next step is a discussion of the experimental design of the present study.

⁴³ Urie Bronfenbrenner, "The Study of Identification Through Interpersonal Perception", in R. Tagiuri and L. Petrullo (eds.), Person Perception and Interpersonal Behavior, California, Stanford University Press, 1958, p. 124-125.

CHAPTER II

EXPERIMENTAL DESIGN

The design for the present study was planned with particular reliance upon the theories of identification proposed by Kagan and Lazowick. According to Kagan's theory the desire to attain goal states commanded by the model provides the subject with an important motivating force for the development of an identification with the model. He proposed that the subject, having perceived certain characteristics of the model, wishes to possess those characteristics in the belief that his similarity to the model will result in his (the subject's) attaining the desired goals. Kagan used the terms "wish", "belief", and "cognitive response" in a manner that did not imply that these processes were available to consciousness or easily verbalized.¹ In the present study the goal states were assumed to be mastery of subject-matter possessed by the teachers in the various courses of study.

Lazowick² theorized that the identification process begins with the subject's imitating the behavior of the model.

1 Jerome Kagan, "The Concept of Identification", in Psychological Review, Vol. 65, 1958, p. 298.

2 Lionel M. Lazowick, "On the Nature of Identification", in Journal of Abnormal and Social Psychology, Vol. 51, 1955, p. 176.

From this point, the subject associates with his imitative behavior meanings or frames of reference which then provide self-stimulation for further behavior. The degree of identification would then be measured by the degree of similarity between the meanings possessed by the subject and the meanings which he perceived to be possessed by the model.

The purpose of this study, then, was to investigate the relationship, if any, between identification of students with teachers and achievement in the subject-matter taught by those teachers. Identification was measured by the use of semantic differential scales. Achievement was measured by use of raw scores attained by the students in the Philadelphia Diocesan examinations for the courses involved in this study.

In order to present as detailed an analysis of the problem as possible, the study was divided into two groups of students. The first of these groups represented the entire sophomore class of college preparatory students at a Catholic high school for boys in Chester, Pennsylvania. The second group represented the entire junior class of college preparatory students at the same school. Only the students following a complete college preparatory curriculum in the sophomore and junior years were included in this study. The number of sophomores was 123. The number of juniors was 82.

1. Semantic Differential.

Semantic differential scales were employed to measure the degree of identification between student as he perceived himself and teacher as the student perceived him. The reason for using this instrument is given by Lazowick:

The semantic differential is a procedure designed to measure objectively the connotative meaning of objects. According to Osgood, the underlying logic can be summarized as follows:

1. The process of judgment or description can be conceived as the allocation of a concept to an experimental continuum, definable by a pair of polar terms.
2. Many different experimental continua, or ways in which meanings vary, are essentially equivalent and hence may be represented by a single dimension.
3. A limited number of such continua can be used to define a semantic space within which the meaning of any concept can be specified.

According to Osgood's findings and my own, the semantic differential provides an objective measure that may be applied to the problem (i.e., the measurement of identification as a relationship between meanings or frames of reference).³

Five concepts were chosen in order to compare the meanings given to each concept by the students. For the sophomores the concepts were: my Religion teacher, my English teacher, my Latin teacher, my Biology teacher, and myself. For the juniors the concepts were: my Religion teacher, my

³ Ibid., p. 178.

English teacher, my History teacher, my Chemistry teacher, and myself. These concepts were rated on fifteen bipolar scales which were representative of the three outstanding factors isolated in Osgood's factor-analytic studies. Five scales were chosen to represent each factor on the basis of having a high loading on that factor and a very low loading on the other two factors.⁴ These scales were chosen also as most appropriate for testing these students in the matter of perceived similarity between themselves and their teachers. The factors were: Factor I (evaluation): good - bad, sacred - profane, rich - poor, valuable - worthless, and fair - unfair; Factor II (potency): hard - soft, heavy - light, rugged - delicate, deep - shallow, and strong - weak; Factor III (activity): fast - slow, angular - rounded, sharp - dull, active - passive, and hot - cold. The test booklet was so designed that the concept to be rated was placed by the subject, following the instruction of the administrator, at the top of a page. The fifteen bipolar scales followed. These scales were continuous lines broken into seven segments with an adjective at one end and its opposite adjective at the other end. The students were instructed to place only one "X" on each scale, but not to omit any scale. They were

⁴ Charles E. Osgood, George J. Suci, and Percy H. Tannenbaum, The Measurement of Meaning, Urbana, University of Illinois Press, 1957, p. 37.

instructed to place the "X" in the extreme segment of the scale closest to the adjective to which they considered the concept very closely related; to place the "X" in the second segment from the adjective if they considered the concept quite closely related to it; to place the "X" in the third segment from the adjective if they considered the concept only slightly related to it; and to place the "X" in the middle segment if they considered the concept equally related to the two adjectives or if they thought that the concept was related to neither adjective. The segments were given values of 1 to 7. The highest score was given to the segment nearest the positive adjective and the lowest score was given to the segment nearest the negative adjective. The scores of the five scales applying to each factor were summed so that the highest score for a factor for any one concept could be no more than 35 and the lowest score could be no less than 5. The rank and order of the scales were changed from page to page in order to avoid transfer effects. A sample of the scales is found in Appendix 1.

By rating each concept on the fifteen scales the student generated a profile for the concept. The degree of similarity between the profiles for the concept "myself" and each profile representing the student's concept of a particular teacher was measured by computing "D". "D" was determined by taking the difference between the scores of two

concepts for each factor, squaring the difference, summing the squares, and taking the square root of the sum.⁵ The profile for the concept "myself" was compared in this manner to the profiles assigned by the student to each of his teachers. The "D" value thus became the operational definition of identification, since "D" was a measure of similarity between the student's concept of himself and the concept of each teacher as the student perceived him.⁶

The semantic differential scales were administered to the students ten weeks after the beginning of the semester. The students had been told, four days before the scales were administered, that they would be asked to fill out a booklet according to the instructions which would be given to them, that the information was to be used for a thesis and that whatever information they gave would be kept confidential. The administrator of the scales was a teacher from a local college. He was not known to the students.

The validity of the semantic differential scales has been reported by Osgood et al. with regard to face validity and comparison of semantic differential scores with scores obtained from other instruments for measuring meaning.⁷

5 Ibid., p. 91.

6 Lazowick, Op. Cit., p.178.

7 Osgood, et al., Op. Cit., p. 14C-166.

The reliability of the scores obtained from the subjects involved in the present study was ascertained by administering the scales to the subjects one week after the first sitting and comparing the two sets of scores according to the criteria for reliability described by Osgood et al.⁸

2. Tests of Academic Achievement.

Achievement in the various courses of study was measured by raw scores attained in the Philadelphia Diocesan mid-year examinations for January, 1965, in those courses. The examinations were constructed by using items based only on the syllabi for the various courses. The Religion examination for sophomores consisted of 100 items. The Grammar and Usage examination for sophomores consisted of 85 items. The Latin examination for sophomores consisted of 80 items. The Biology examination, taken by sophomores, consisted of 100 items. The Religion examination for juniors consisted of 100 items. The Grammar and Usage examination for juniors consisted of 85 items. The History examination for juniors (United States and Pennsylvania History) consisted of 100 items. The Chemistry examination, taken by juniors, consisted of 74 items. The final Religion examination for juniors, taken in June, 1965, was added to the study because the raw

⁸ Ibid., p. 133-135.

scores which one section of juniors attained in the mid-year Religion examination were not available for this study. The final Religion examination for juniors consisted of 100 items. The examination periods for all the mid-year examinations considered in this study were of 50 minutes duration. The one final examination included was of 40 minutes duration.

Raw scores were obtained by giving one point for each item answered correctly in all examinations except Chemistry. Correct answers for the first 70 items in Chemistry had a value of one point each. The final four items were practical problems. The scoring instructions for each of these four items assigned 3 points for work and method and 2 points for a correct answer. Thus, the highest possible raw score in the Chemistry examination was 90.

The validity of these Diocesan examinations was established by the fact that all items were taken from the detailed syllabi for the courses as promulgated by the office of the Superintendent of Schools for the Archdiocese of Philadelphia. Reliability was tested by the test-retest method. Students were retested in each examination one week after the examination was originally given.

3. Subjects.

The subjects were 123 sophomores and 82 juniors. These constituted all the sophomore and junior students who had been

chosen to follow the college preparatory course. These students had been grouped homogeneously into the following sections:

Section 2A1 (second year, academic, first section),
N = 40;

Section 2A2 (second year, academic, second section),
N = 40;

Section 2A3 (second year, academic, first section),
N = 43;

Section 3A1 (third year, academic, first section),
N = 34;

Section 3A2 (third year, academic, second section),
N = 48.

The method of grouping had been devised to make use of all available data pertaining to the scholastic ability of each student. This data included for the sophomores: the standard scores of the S.R.A. High School Placement Test (IQ, Reading, Language Usage and Arithmetic) taken in March preceding their entrance into high school, raw scores attained in each subject in the Diocesan examinations at mid-year of their freshman year, the report card mark given by teachers at mid-year of the freshman year and the recommendation of their teachers during the Spring of the freshman year.

The recommendation of the teachers was made for each student whom they taught. It was made specific by having the teachers answer the following questions for each of their students: (1) "Do you consider this boy to be in his proper section according to the ability he has shown in your class?"

and (2) "If, in your opinion, he is not in the proper section, which section do you recommend for him for next year?"

The data for judging the juniors was the same as that for the sophomores with the following exception. The Reading, Language Usage and Arithmetic scores of their High School Placement Test were replaced by the standard scores attained by the juniors in tests 4, 5, 6 and 7 (Quantitative Thinking, Social Studies Reading, Natural Science Reading and Literature Reading) of the Iowa Tests of Educational Development administered during the sophomore year.

The students were provisionally grouped according to their ability as indicated by the above-mentioned criteria. Final grouping was made after a meeting of the faculty members who had taught the students involved. At this meeting, the teachers were asked for specific recommendations concerning the ability of students concerning whom there was any doubt. The sections were then composed for the following year after these recommendations had been made and the grouping had met with the approval of the majority of the teachers.

A system of block rostering has been followed in the high school used for the present study. The result is that a student attends all his classes with the same group. This arrangement proved to be an advantage for the present study, since each student received the same instruction as every other member of his section.

The two junior sections had the same teacher of Religion, the same teacher of English, the same teacher of History and the same teacher of Chemistry.

Among the sophomores, however, there was a difference. All three sections had the same Religion teacher. No one teacher had the three sections for other courses involved in the study. The English teacher of Section 2A1 was different from the English teacher of the other two sections. The Latin teacher and the Biology teacher of Section 2A2 were different from the Latin teacher and the Biology teacher of the other two sections.

4. Data and Procedures.

All data for each student were recorded on specially prepared charts consisting of five columns. Separate charts were used for each section. The names of the students were placed in the first column. For the sophomores the remaining four columns were designated for Religion, English, Latin and Biology. For the juniors the remaining four columns were designated for Religion, English, History and Chemistry. Each of the columns designated for subject-matter was subdivided into two columns. On the left was placed the "D" score obtained by comparing the student's self profile with the profile which he had assigned to the teacher of that course. In

this way, all the data pertinent to the present study, for each student, was placed on a continuous line beside his name.⁹

The relationship between the degree of identification of each sophomore student with each of his teachers and his achievement in the course taught by that teacher was examined for each of the three sections and then for the combined sections. The relationship between the degree of identification of each junior student with each of his teachers and his achievement in the course taught by that teacher was examined for each of the two sections and then for the combined sections.

Arithmetic averages were computed for the "D" scores obtained from the semantic differential scales by comparing the student's self profile with that which he attributed to each of his teachers. Arithmetic averages were also computed for the raw scores attained in the Diocesan examinations.

Standard deviations for the "D" scores and for the raw scores attained in the Diocesan examinations were also computed.

⁹ The charts have been reproduced in Appendix 2.

Pearson product-moment coefficients of correlation were computed between the "D" scores of the semantic differential scales for each teacher and the raw scores attained in the Diocesan examination for the course of study taught by that teacher. These correlation coefficients were assigned the following symbols:

- r_{12} - correlation between "D" and Diocesan examination raw scores in Religion.
- r_{13} - correlation between "D" and Diocesan examination raw scores in English.
- r_{14} - correlation between "D" and Diocesan examination raw scores in Latin.
- r_{15} - correlation between "D" and Diocesan examination raw scores in Biology.
- r_{16} - correlation between "D" and Diocesan examination raw scores in Chemistry.
- r_{17} - correlation between "D" and Diocesan examination raw scores in History.

Each of the correlation coefficients was examined to determine its statistical significance. Specially prepared tables by H.A. Wallace and G.W. Snedecor were used. These tables indicate whether a correlation coefficient is significant at the .05 level or .01 level of probability.

The following chapter will deal with the results of the above-mentioned processes and with the interpretation of the results.

CHAPTER III

RESULTS AND DISCUSSION

In presenting the results of the study, the first consideration is given to the reliability of the instruments used to measure identification of students with their specific teachers and the students' achievement in the various courses of study examined in the experiment.

1. Reliability of the Instruments.

Identification of student with teacher was measured by computing "D" scores obtained by comparing the profiles which each student generated for the concept myself with the profile which he generated for each concept representing one of his teachers. The profiles were generated on the semantic differential scales.¹ Reliability of the semantic differential scales as used by the students was determined by administering the scales to representative groups of students one week after the first administration of the scales. Scores for the concepts given by the students for the two sittings were then compared for significant differences. The comparison was made of the scores obtained for each student individually and of the average deviations of the students as a group.

1 cf. Chapter II, p. 33-34.

The differences in scores were taken for the various factors (I, evaluation; II, potency; and III, activity) and for total differences. The differences were then divided by the number of scales used. Because five scales were used to measure each factor, the differences within a factor were divided by five. Because fifteen scales were used to generate a profile for each concept, the total differences were divided by fifteen. Thus, differences were expressed in terms of units (or decimals of units) of a seven-unit scale. This procedure was followed in comparing the two sets of scores produced by each student for each of the concepts involved in the study.

To obtain average differences for an entire group, the differences produced by the individuals in each group were summed and the sum was divided by the number of individuals in the group. This procedure was followed for differences in each factor and for total differences.

The sophomore group which participated in the second administration was Section 2A1. The entire forty members of the section participated. The following results were obtained: for the concept my Religion teacher: Factor I, .59; Factor II, .51; Factor III, .58; total difference, .56; for the concept my English teacher: Factor I, .92; Factor II, .78; Factor III, .75; total difference, .82; for the concept my Latin teacher: Factor I, .72; Factor II, .85; Factor III, .50; total

difference, .71; for the concept my Biology teacher: Factor I, .66; Factor II, .59; Factor III, .57; total difference, .61; for the concept myself: Factor I, .54, Factor II, .50; Factor III, .45; total difference, .50.

The differences for individual students on the various factors ranged from zero to two units with no case exceeding two units. For the entire group, average differences were less than one unit with the largest difference being .92 (Factor I, my English teacher). These results satisfied the standards of reliability established by Osgood et al.^{2,3}

The junior group which participated in the second administration of the semantic differential scales was Section 3A1. Thirty-two of the thirty-four members were present for the second sitting. The following results were obtained: for the concept my Religion teacher: Factor I, .45; Factor II, .63; Factor III, .47; total difference, .52; for the concept my English teacher: Factor I, .43; Factor II, .54; Factor III, .46; total difference, .48; for the concept my History teacher: Factor I, .48; Factor II, .64; Factor III, .54; total difference, .55; for the concept my Chemistry teacher: Factor I, .84; Factor II, .65; Factor III, .57; total difference, .55; for the concept myself: Factor I, .43; Factor II, .33; Factor III, .47; total difference, .41.

2 Charles E. Osgood, George J. Suci, and Percy H. Tannenbaum, The Measurement of Meaning, Urbana, University of Illinois Press, 1957, p. 134.

3 Ibid., p. 138.

The differences for individual students on the various factors ranged from zero to two units with no case exceeding two units. For the entire group, average differences were less than one unit with the largest difference being .84 (Factor I, my Chemistry teacher). These results also satisfied the standards of reliability previously mentioned. Therefore, the semantic differential scales were considered to be reliable for use in this study for measuring identification among junior groups.

The reliability of the Diocesan Examinations which were used to measure achievement in the various courses of study was investigated by test-retest technique. One week after the students had written the Diocesan Examination they were given the same examinations the second time. The relationship of the raw scores attained by the students on the two occasions was measured by computing Pearson product-moment correlation coefficients for each examination.

Among the sophomores, Section 2A1 was selected to be retested in Religion II and Biology, Section 2A2 was selected to be retested in Latin II, and Section 2A3 was selected to be retested in English Grammar and Usage II. The following correlation coefficients were obtained: Religion II, $r=.98$; English Grammar and Usage II, $r=.86$; Latin II, $r=.31$; Biology, $r=.97$.

Of the four examinations, three had coefficients sufficiently high to be considered reliable measuring instruments of achievement. The remaining coefficient, that for Latin II was so low that the results of the examination were considered not sufficiently reliable to be used in this study.

A possible explanation of the wide difference in performance in the two sittings is that Section 2A2 was the poorest of the three sections with respect to Latin, as the mean scores of the three sections indicate. The members of Section 2A2, fearing failure in their mid-year examination, prepared intensely for the examination. When they were retested, however, they lacked the motivation which they had exhibited at the first sitting. Probably, since they were patently not good Latin students, the effects of their intense study for the first testing were not lasting.

Of the four examinations in which the juniors were retested, three produced correlation coefficients sufficiently high to be considered reliable measuring instruments of achievement. They were: Grammar and Usage II, $r=.93$; United States and Pennsylvania History, $r=.96$; and Chemistry, $r=.87$. The other examination, Religion III, produced a coefficient so low ($r=.30$) that the results of the examination could not be used in this study.

The results of the unreliable examinations have been reported along with the results of the examinations considered

reliable, but no conclusions have been drawn from the comparison of identification with achievement with respect to Latin II and Religion III.

2. Average Identification Scores and Average Achievement Scores.

In Table I, arithmetic averages and standard deviations for "D" scores obtained from the semantic differential scales and for Diocesan Examinations are presented for each section of the sophomore group and for the combined sophomore group by individual courses.

In each of the courses for sophomores considered in this study, Section 2A1 had the highest mean score in the Diocesan Examination. This result was in keeping with the rostering procedure followed in the school. The sophomore students were assigned to the various sections after attention had been given to their performances in the S.R.A. High School Placement Test and in the mid-year Diocesan Examinations for their freshman year. Attention had also been given to their report card mark in each course of study and to the individual recommendation of the teachers who had instructed them during their freshman year.

The students who had been considered on the basis of the above-mentioned information to be the most capable students had been assigned to Section 2A1. The next group, Section 2A2, had been considered to be not so capable as the

Table 1.-

Arithmetic Averages and Standard Deviations of "D" Scores and Raw Scores of Diocesan Examinations for Sophomore Sections 2A1, 2A2 and 2A3.

Section	N	<u>"D" Scores</u>		<u>Diocesan Examination</u>	
		Mean	S.D.	Mean	S.D.
<u>Religion II</u>					
2A1	40	9.53	4.72	89.15	5.05
2A2	40	9.21	5.04	85.62	5.62
2A3	43	11.17	5.58	77.28	6.83
Combined	123	10.00	5.21	83.85	7.76
<u>English II</u>					
2A1	40	11.94	5.54	66.08	6.19
2A2	40	8.23	3.86	62.95	6.97
2A3	41	9.06	4.11	51.66	7.04
Combined	121	9.73	4.83	60.16	9.17
<u>Latin II</u>					
2A1	40	8.22	3.61	50.32	10.42
2A2	40	9.85	4.76	28.40	3.42
2A3	43	9.16	4.43	37.02	4.43
Combined	123	9.08	4.35	38.54	11.20
<u>Biology</u>					
2A1	40	8.96	4.62	64.08	9.28
2A2	40	8.81	5.00	51.28	9.42
2A3	43	9.17	4.66	58.47	9.06
Combined	123	8.98	4.77	57.95	10.41

above-mentioned section, but more capable than the group placed in Section 2A3. Section 2A1 was expected to attain the highest mean score in each of the Diocesan Examinations. Section 2A2 was expected to attain mean scores lower than Section 2A1 but higher than those attained by Section 2A3. Section 2A3 was expected to attain mean scores lower than those attained by the other two sections. This expectation was realized in the Religion examination and the English Grammar and Usage Examination. It was not realized, however, in the Latin and Biology examinations. In the latter examinations, Section 2A3 attained a higher mean score than Section 2A2.

Religion was taught to the three sections by the one teacher. This was the only course taught by the same teacher to all the sophomore groups considered in this study. Section 2A1 had one English teacher while Sections 2A2 and 2A3 had another. Sections 2A1 and 2A3 had the same Latin teacher, different from the Latin teacher for Section 2A2. The same was true for the Biology course, Sections 2A1 and 2A3 having the same Biology teacher different from the Biology teacher for Section 2A2. The fact that Section 2A2 attained a mean score in Latin and Biology lower than those attained by Section 2A3 in these courses may have been due to differences in presentation of subject matter by the teachers of these two courses.

There was no clearly defined pattern of identification scores. The smaller the "D" scores the more similar was the profile for the concept myself to that of the concept to which it was compared. The degree of similarity was interpreted as the degree of identification of student with teacher. Therefore, the smaller the "D" score, the greater was the degree of identification of student with teacher as the student perceived him.

The range of "D" scores with respect to their Religion teacher indicated no great variation among the sections. Section 2A1 produced a range of 19.27 points (2.00 to 21.27); Section 2A2 produced a range of 19.80 points (1.41 to 21.21); and Section 2A3 produced a range of 23.46 points (1.41 to 24.07), giving a total range of 23.46 points.

The range of "D" scores with respect to their English teachers again indicated no great variation. Section 2A1 produced a range of 21.94 points (4.47 to 26.41); Section 2A2 produced a range of 20.71 points (2.44 to 23.15); and Section 2A3 produced a range of 16.63 points (1.00 to 17.63), giving a total range of 25.41 points.

There was slightly more variation among the sections with respect to their Latin teachers than there was in relation to their other teachers. Section 2A1 produced a range of 15.84 points (1.73 to 17.57); Section 2A2 produced a range of 24.76 points (3.00 to 27.76); and Section 2A3 produced a

range of 19.57 points (1.00 to 20.57), giving a total range of 26.76 points.

There was again very little variation among the sections with respect to their Biology teachers. Section 2A1 produced a range of 22.15 points (3.00 to 25.15); Section 2A2 produced a range of 18.95 points (3.00 to 21.95); and Section 2A3 produced a range of 18.20 points (1.00 to 19.20), giving a total range of 24.15 points.

In Table II, arithmetic averages and standard deviations for "D" scores obtained from the semantic differential scales and for achievement as measured by Diocesan Examinations are presented for each section of the junior group and for the combined junior group by individual courses of study.

In each of the courses considered in this study, Section 3A1 had the higher mean score in the Diocesan Examination than did Section 3A2. These results are in keeping with expectations based on the manner of rostering followed at the school.

The two junior sections had the same Religion teacher, English teacher, History teacher and Chemistry teacher.

In relation to their Religion teacher the range of "D" scores for Section 3A1 was 17.49 points (0.00 to 17.49); for Section 3A2, 18.49 points (0.00 to 18.49); and for the combined sections 18.49 points.

Table II.-

Arithmetic Averages and Standard Deviations of "D" Scores and Raw Scores for Diocesan Examinations for Juniors Sections 3A1 and 3A2.

Section	N	<u>"D" Scores</u>		<u>Diocesan Examinations</u>	
		Mean	S.D.	Mean	S.D.
<u>Religion III</u>					
3A1	31	8.07	4.56	89.81	3.07
3A2	48	9.29	3.93	85.67	3.74
Combined	79	8.81	4.22	87.29	4.04
<u>English III</u>					
3A1	34	7.44	3.88	71.06	4.67
3A2	48	6.69	4.69	66.52	4.84
Combined	82	8.17	4.41	68.40	5.27
<u>United States and Pennsylvania History</u>					
3A1	33	9.44	6.03	81.94	9.30
3A2	48	8.96	5.09	73.35	6.66
Combined	81	9.15	5.49	76.55	9.87
<u>Chemistry</u>					
3A1	32	8.64	5.40	58.12	10.69
3A2	47	9.67	5.72	47.66	9.74
Combined	79	9.26	5.62	51.90	11.37

In relation to their English teacher, the range of "D" scores for Section 3A1 was 16.87 points (2.23 to 19.10); for Section 3A2, 23.74 points (0.00 to 23.74); and for the combined group 23.74 points.

In relation to their History teacher, the range of "D" scores for Section 3A1 was 27.45 points (2.23 to 29.68; for Section 3A2, 21.73 points (1.00 to 22.73); and for the combined group, 26.68 points.

In relation to their Chemistry teacher, the range of "D" scores for Section 3A1 was 26.46 points (1.41 to 27.87); for Section 3A2, 22.30 points (2.23 to 24.53) and for the combined sections, 26.46 points.

3. Results of the Null Hypotheses Tested.

The first null hypothesis tested was:

There is no significant relationship between identification scores obtained on the semantic differential scales with respect to the concept "my Religion teacher" and achievement as measured by the Philadelphia Diocesan Religion Examination for high school sophomores.

Pearson product-moment correlation coefficients⁴ were computed for each section individually. The results were as follows:

⁴ Because a low "D" score indicated a close similarity of meaning for the two concepts compared to each other and therefore a high degree of identification, and a high score on the Diocesan Examination indicated a high degree of achievement, then when correlation coefficients were computed from these data, a minus coefficient indicated a positive correlation and a plus coefficient indicated a negative correlation.

Section 2A1	- r_{12} = -.293
Section 2A2	- r_{12} = -.315
Section 2A3	- r_{12} = -.137

Each of the correlation coefficients was tested for significance according to the tables constructed by Wallace and Snedecor as adapted and reported by Guilford.⁵ The coefficient for Section 2A2 was found to be significant at the .05 level, whereas the coefficients computed for Sections 2A1 and 2A3 were found not to be significant at either the .05 or .01 levels.

A correlation coefficient was computed using the combined data for the three sections. It was -.271. This coefficient was found to be significant at the .01 level.

The second null hypothesis tested was:

There is no significant relationship between identification scores obtained on the semantic differential scales with respect to the concept "my English teacher" and achievement as measured by the Philadelphia Diocesan English Grammar and Usage Examination for high school sophomores.

Pearson product-moment correlation coefficients were computed for each section individually. The correlation coefficients were as follows:

Section 2A1	- r_{13} = -.213
Section 2A2	- r_{13} = .064
Section 2A3	- r_{13} = .035

None of the above correlation coefficients were found to be significant at either the .05 or the .01 levels.

⁵ J.P. Guilford, Fundamental Statistics in Psychology and Education, New York, McGraw-Hill, 1950, p. 538.

When the three sections were combined a correlation coefficient of .076 was computed. This coefficient was tested and found to be not significant at either the .05 or .01 levels.

The third null hypothesis tested was:

There is no significant relationship between identification scores obtained on the semantic differential scales with respect to the concept "my Latin teacher" and achievement as measured by the Philadelphia Diocesan Latin Examination for sophomores.

The Pearson product-moment correlation coefficients were computed for each of the three sections. They were as follows:

Section 2A1	- $r_{14} = -.179$
Section 2A2	- $r_{14} = .175$
Section 2A3	- $r_{14} = -.166$

Each of the above coefficients was tested for statistical significance. The results of the tests indicated that none of the coefficients dealing with Latin were significant at either the .05 or .01 level. The correlation coefficient obtained for the combined sections was -.171. This correlation was tested and found not to be significant at either the .05 or .01 level.

The last null hypothesis tested which used sophomore subjects was:

There is no significant relationship between identification scores obtained on the semantic differential scales with respect to the concept "my Biology teacher" and achievement as measured by the Philadelphia Diocesan Biology Examination.

This relationship was examined by computing Pearson product-moment correlation coefficients. The following coefficients were obtained:

Section 2A1	- r_{15}	= -.269
Section 2A2	- r_{15}	= -.110
Section 2A3	- r_{15}	= .208

Each of the above coefficients was tested for statistical significance. The tests showed that none of the coefficients dealing with Biology were significant at either the .05 or .01 level.

The three sections were again combined and a correlation coefficient was computed for the entire group. This coefficient was .045. It was found not to be significant at either the .05 or .01 level.

The procedure of examining the relationship of identification of student with teacher to achievement in course work used with sophomore subjects was again used with the junior subjects. The first null hypothesis dealing with juniors was:

There is no significant relationship between identification scores obtained on the semantic differential scales with respect to the concept "my Religion teacher" and achievement as measured by the Philadelphia Diocesan Religion Examination for high school juniors.

Pearson product-moment correlation coefficients were computed for Sections 3A1 and 3A2. These coefficients were:

Section 3A1	- r_{12}	= .044
Section 3A2	- r_{12}	= .044

Neither coefficient was found to be significant at the .05 or at the .01 level.

When the two sections were combined into a single group a correlation coefficient was computed for the group. It was $-.033$. This was not significant at the .05 or at the .01 level.

The second null hypothesis dealing with juniors was:

There is no significant relationship between identification scores obtained on the semantic differential scales with respect to the concept "my English teacher" and achievement as measured by the Philadelphia Diocesan English Grammar and Usage Examination for high school juniors.

Pearson product-moment correlation coefficients were computed for Sections 3A1 and 3A2. These coefficients were:

Section 3A1	- $r_{13} = .030$
Section 3A2	- $r_{13} = .209$

When tested for statistical significance these coefficients proved not to be significant at the .05 or at the .01 level.

When the two sections were combined and a Pearson product-moment correlation coefficient was computed for the entire group, the coefficient obtained was $.070$. This was not significant at the .05 or at the .01 level.

The third null hypothesis tested was:

There is no significant relationship between identification scores obtained on the semantic differential scales with respect to the concept "my History teacher" and achievement as measured by the Philadelphia Diocesan United States and Pennsylvania History Examination.

The Pearson product-moment correlation coefficients computed for Sections 3A1 and 3A2 were:

Section 3A1	- $r_{17} = -.165$
Section 3A2	- $r_{17} = .196$

These were tested for statistical significance and found not to be significant at the .05 or at the .01 level.

When the sections were combined the correlation coefficient obtained was .001. This was not significant at the .05 or at the .01 level.

The last null hypothesis tested was:

There is no significant relationship between identification scores obtained on the semantic differential scales with respect to the concept "my Chemistry teacher" and achievement as measured by the Philadelphia Diocesan Chemistry Examination.

Pearson product-moment correlation coefficients were computed for Sections 3A1 and 3A2. They were:

Section 3A1	- $r_{16} = .359$
Section 3A2	- $r_{16} = -.350$

When tested both of these coefficients proved to be statistically significant at the .05 level. When the two sections were combined into one group a coefficient of $-.091$ was obtained. This was not significant at either the .05 or .01 level.

4. Discussion.

A. Sophomores

A discussion of the experimental data is now presented, giving attention first to the relationship between identification of sophomores with their Religion teacher and their achievement in their Religion course as measured by mid-year Diocesan Religion Examination for sophomores.

Religion was the only course considered in this study in which the three sophomore sections had the same teacher. Section 2A2 had the lowest mean score. Therefore, as a group this section indicated closer identification with their Religion teacher than did the other two sections.

A comparison of standard deviations for the "D" scores shows that there was less variability among the members of Section 2A1 in comparing themselves to their Religion teacher than there was for the other two sections.

When the three sections were combined the entire college preparatory group of sophomores produced a mean "D" score of 10.00 with a standard deviation of 5.21. These were the largest mean scores and standard deviations produced by the combined sophomore group for "D" scores in this study.

A comparison of individual "D" scores within the sections indicates a rather close similarity among the sections. The ranges were: for Section 2A1, 19.27 points; for Section 2A2

19.80 points; and for Section 2A3, 22.96 points. The smallest "D" score was 1.41, shared by Sections 2A2 and 2A3. The smallest "D" score found in Section 2A1 was 2.00, only .59 greater than that found in the other two sections. The largest "D" score, 24.37, was found in Section 2A3. The largest "D" scores found in Sections 2A1 and 2A2 were 21.27 and 21.21 respectively. The similarity of "D" scores among the three sections indicates that identification with the teacher of Religion is not influenced by scholastic ability as assessed previous to the students' exposure to the teacher.

The data dealing with achievement in the Religion course was in conformity to expectations based on the rostering procedure of the school, with Section 2A1 attaining the highest mean score, 89.15. Section 2A2, with a mean score of 85.62 was second and Section 2A3 was last. The mean score of Section 2A3 was 77.28.

The range of scores was: for Section 2A1, eighteen points (78-96); for Section 2A2, twenty-four points (74-98); and for Section 2A3, thirty-four points (56-90). The standard deviations for Sections 2A1, 2A2 and 2A3 were 5.05, 5.62 and 6.83, respectively.

As reported on page 54, when the null hypothesis dealing with the relationship between the sophomores' identification scores regarding their Religion teacher and achievement scores attained on the sophomore Religion examination was

tested, one section and the combined group of sophomores produced significant correlation coefficients.

The correlation coefficient for Section 2A2 was significant at the .05 level. The correlation coefficient for the combined sections was found to be statistically significant at the .01 level. This was the only instance among the sophomores in which the three sections produced a positive correlation. It was the only one among the sophomores in which there was a statistically significant correlation for a section or for combined groups.

Summary.- Similarity with respect to "D" scores among the three sections indicates that identification with the Religion teacher is independent of scholastic ability as assessed by the school previous to the students' taking the sophomore Religion test. The mean of "D" scores for Religion was higher than that computed for any of the other sophomore subjects involved in this study. With respect to achievement in Religion, the three sections attained mean scores in keeping with expectations based on the method of rostering followed at the school. The three sections produced positive correlations between identification and achievement. The null hypothesis which proposed that there is no significant relationship between identification scores and achievement scores in the area of Religion was rejected for Section 2A2 at the .05 level and for the combined groups at the .01 level.

The relationship between identification of the sophomore students with their English teachers and achievement in English as measured by the Philadelphia Diocesan Grammar and Usage Examination is now considered. In this study there were two teachers of sophomore English, one assigned to Section 2A1 and the other assigned to Sections 2A2 and 2A3.

Again Section 2A2 had the lowest mean "D" score, 6.23. The mean "D" score for Section 2A1 was 11.94 and for Section 2A3 it was 9.06. The mean "D" score produced by Section 2A1 was the highest produced in the study. Since their English teacher taught no other section involved in this study and taught Section 2A1 only the one course, there is no other mean score with which to compare it.

A comparison of standard deviations for "D" scores shows Section 2A2 indicating less variability in comparing themselves to their teacher than did the other two sections. The standard deviation for Section 2A2 was 3.86. Section 2A3 was next with a standard deviation of 4.11. The members of Section 2A1 indicated the most variability among themselves.

A comparison of individual "D" scores within the sections shows that ranges for Sections 2A1 and 2A2 were quite similar. Section 2A1 produced a range of 21.94 points and Section 2A2 a range of 20.71 points. Comparatively the range for Section 2A3, 16.63, was much narrower. Although their ranges were similar, Sections 2A1 and 2A2 were quite

different from each other, as the mean scores and standard deviations reflect.

The smallest "D" score was 1.00, found in Section 2A3. The smallest "D" score found in Section 2A2 was 2.44 and in Section 2A1 it was 4.47. The largest "D" score, 26.41, was produced by a student of Section 2A1. The largest "D" scores in Sections 2A2 and 2A3 were 23.15 and 17.63 respectively.

The fact that the members of Section 2A1 indicated less identification with their English teacher than the other two sections indicated with their English teacher may have been influenced by the fact that Section 2A1's teacher was a different person from the person who taught the other two sections.

The data dealing with achievement in the English course showed Section 2A1, with a mean score of 66.08, attaining as a group greater achievement than the other two sections attained. Section 2A2 was second, with a mean score of 62.95. Section 2A3 was last, with a mean score of 51.66. Again the results were expected for the reason cited with respect to the achievement results in the Religion course.

The range of scores was: for Section 2A1, twenty-nine points (49-78); for Section 2A2, twenty-nine points (48-77); and for Section 2A3, thirty-one points (36-67). The standard deviations were 6.19, 6.97 and 7.04 for Sections 2A1, 2A2 and 2A3, respectively.

As reported on page 54, when the null hypothesis dealing with the relationship between the sophomores' identification scores regarding their English teachers and achievement scores attained on the sophomore English Grammar and Usage examination was tested, Section 2A1 was the only group which produced a negative correlation. When the sections were combined the correlation was positive. None of these coefficients were statistically significant. In fact, the coefficients for Sections 2A2 and 2A3 and for the combined group approached zero correlation very closely.

Summary.- Sections 2A1 and 2A2 indicated a variance of "D" scores similar to each other as far as range was concerned. Section 2A3 indicated a narrower range than did the other two sections. Mean scores and standard deviations of the three sections indicated greater similarity between Sections 2A2 and 2A3 (which had the same English teacher) than Section 2A1 (which had a different English teacher). With respect to achievement in English the three sections attained scores in keeping with expectations based on the method of rostering followed at the school. Only Section 2A1 produced a negative correlation between identification scores and achievement scores. The positive correlation coefficients produced by the other two sections and by the entire sophomore college preparatory group approached zero correlation. None of the coefficients were statistically significant. The null

hypothesis which proposed that there is no significant relationship between identification scores and achievement scores in the area of English could not be rejected.

The relationship between identification of the sophomore students with their Latin teachers and achievement in Latin as measured by the Philadelphia Diocesan Latin Examination is reported here but cannot be used for conclusions since the sophomore Latin examination did not prove sufficiently reliable to be trusted as a measure of achievement.

Involved in this study were two teachers of sophomore Latin, one assigned to Sections 2A1 and 2A3 and the other assigned to Section 2A2. Section 2A1, with a mean "D" score of 8.22, indicated as a group closer identification with their teacher than did the other two sections. Section 2A3 was second with a mean "D" score of 9.16. Of the three sections Section 2A2 indicated the smallest degree of identification with a mean "D" score of 9.85.

A comparison of standard deviations for the "D" scores shows Section 2A1 indicating less variability to each other in comparing themselves to their teacher than did the other sections.

A comparison of individual "D" scores shows a wider range in the entire college preparatory group in relation to their Latin teachers than was found in relation to their other teachers. The members of Section 2A1, however, showed

a narrower range in relation to their Latin teacher than they did for any of their other teachers. Section 2A2 produced the widest range of "D" scores in relation to their Latin teacher of all the ranges of "D" scores for all the sections. The ranges were: for Section 2A1, 15.84 points; for Section 2A2, 24.76 points; and for Section 2A3, 19.57 points.

The smallest "D" score among the three sections was 1.00, found in Section 2A3. The smallest "D" score in 2A1 was 1.73 and in Section 2A2 the smallest "D" score was 3.00.

The largest "D" score, 27.76, was found in Section 2A2. The largest "D" score in Section 2A1 was 17.57 and in Section 2A3, 20.57.

The fact that members of Section 2A2 showed less identification with their Latin teacher than the other sections showed may be due to the fact that the Latin teacher of Section 2A2 was different from the Latin teacher of the other two sections. A similar result has been observed with respect to the English teachers.

The data dealing with achievement in the Latin course is here discussed, but is not to be considered in general conclusions. Section 2A1, as was expected, had the highest mean score, 50.32. Section 2A2, which was expected to produce a higher mean score than that for Section 2A3, failed to do so. The mean score for Section 2A2 was 28.40, whereas the mean score for Section 2A3 was 37.02. The range of scores was:

for Section 2A1, thirty-eight points (34-72); for Section 2A2 sixteen points (20-36); for Section 2A3, eighteen points (32-50). The standard deviations were 10.42, 3.42 and 4.43 for Sections 2A1, 2A2 and 2A3, respectively.

As reported on page 55, when the null hypothesis dealing with the relationship between the sophomores' identification scores regarding their Latin teachers and achievement scores attained in the sophomore Latin examination was tested, none of the correlation coefficients computed proved to be significant at either the .05 or the .01 level of confidence. It is to be noted, however, that the coefficients computed for Sections 2A1 and 2A3, both of which had the same teacher, were negative. The coefficient for Section 2A2 which had a different teacher was positive.

Summary.- Among the three sections there was some variance with regard to "D" scores in relation to their Latin teacher. While the mean scores were fairly close, the standard deviation and range of Section 2A1 indicated more homogeneity for the members of this section than the standard deviations and ranges of the other two sections indicated. The differences with respect to range were more pronounced than was observed in the two preceding courses.

With respect to achievement in Latin, the mean scores did not follow the pattern expected. The mean score of Section 2A3 was higher than that of Section 2A2.

The null hypothesis that there was no significant relationship between identification scores and achievement scores in Latin could not be rejected.

Since the Latin examination did not prove to be a reliable instrument for measuring achievement the results of this part of the study are to be disregarded in the final conclusions.

The relationship between identification of the sophomore students with their Biology teachers and achievement in Biology as measured by the Philadelphia Diocesan Biology examination is now considered. In this study there were two teachers of Biology, one assigned to Section 2A2 and the other assigned to Sections 2A1 and 2A3.

Section 2A2, with a mean "D" score of 8.81, indicated as a group a closer identification with their teacher than did the other two sections. Section 2A1, with a mean score of 8.96, was second while Section 2A3 indicated the smallest degree of identification, with a mean score of 9.17.

A comparison of standard deviations for the "D" scores indicated that the members of Section 2A1 showed less variability in comparing themselves to their Biology teacher than the other two sections showed. A standard deviation of 4.62 was computed for this section. Section 2A3 was second with a standard deviation of 4.66. Section 2A2 was last with a standard deviation of 5.00. There was much similarity, however,

among the sections as the mean scores and standard deviations reflect. When the sections were combined the entire college preparatory group of sophomores produced a mean "D" score of 5.98 with a standard deviation of 4.77.

A comparison of "D" scores within the sections shows a close similarity of range between Sections 2A2 and 2A3 although the two sections had different Biology teachers.

The smallest "D" score, found in Section 2A3, was 1.00. The smallest "D" score found in Section 2A1 was 3.00, the same as the smallest "D" score found in Section 2A2.

The largest "D" score, 25.15, was found in Section 2A1. The largest "D" score in Section 2A2 was 21.95 and in Section 2A3, 19.20.

The close similarity of mean scores and standard deviations with respect to the "D" scores indicates that there was very little difference among the three sections with respect to identification although two different teachers were involved.

The data dealing with achievement in the Biology course showed Section 2A1, with a mean score of 64.08 attaining as a group, greater achievement than that of the other two sections. This result was expected. Section 2A3, however, attained a higher mean score than did Section 2A2. The mean score produced by Section 2A3 was 58.47 as compared to a mean score of 51.28 for Section 2A2. These results were contrary to expectations since the members of Section 2A2 were considered to be more competent students than those of Section 2A3.

The ranges of scores were: for Section 2A1, forty-two points (46-88); for Section 2A2, forty-three points (29-73); and for Section 2A3, thirty-four points (41-75).

As reported on pages 55-56, when the null hypothesis dealing with the relationship between the sophomores' identification scores regarding their Biology teachers and achievement scores attained on the Biology examination was tested, none of the correlation coefficients computed were significant at either the .05 or .01 level of confidence.

These results were different inasmuch as the two sections which had the same teacher (2A1 and 2A3) had opposite correlations, whereas, in the cases of Latin and English, the two sections which had the same teacher had correlations in the same direction and the correlation of the remaining section was in the opposite direction. The coefficient for the combined group approached zero correlation.

Summary.- Close similarity among the three sections with respect to identification of the students with their Biology teachers was apparent from the close similarity of mean "D" scores and standard deviations.

With respect to achievement in Biology, while Section 2A1 attained the highest mean score, as had been expected, Section 2A3 attained a higher mean score than that attained by Section 2A2. This was contrary to expectations.

The null hypothesis which proposed that there is no significant statistical relationship between identification scores and achievement scores could not be rejected.

Summary of Data for the Sophomore Group.- There were 123 sophomores involved in this study. All were enrolled in the college preparatory group. They had been grouped homogeneously according to scholastic competence into three sections, the first two of which had forty students and the third had forty-three students. Two students of Section 2A3 were not present for the English Grammar and Usage examination. In this one case the number of students involved was different from that of the other three areas.

A comparison of "D" scores, the statistical measure of identification, indicated a rather close similarity among the sections. Section 2A1 had the lowest mean score only with respect to their Religion and Biology teachers and the highest mean score with respect to their English teacher. Section 2A2 had the lowest mean score with respect to their Religion, English and Biology teachers and the highest score with respect to their Latin teacher. Section 2A3 had the second lowest mean score with respect to their English and Latin teachers and the highest mean score with respect to their Religion and Biology teachers.

The mean scores and standard deviations for all the sections were similar enough to indicate that differences in

scholastic competence among the students did not greatly influence them with respect to identification with the teachers.

Achievement, measured by raw scores attained in the Diocesan examinations and in the four courses of study involved in the experiment, was in conformity to expectations based on the rostering procedure followed at the school for two of the courses, Religion and English. In the case of Latin and Biology, however, Section 2A2 attained a lower mean score than Section 2A3. These results were contrary to expectations.

The relationship of identification to achievement was tested by computing Pearson product-moment correlation coefficients using "D" scores and raw scores from the Diocesan examinations. The coefficients obtained were then compared to charts constructed by Wallace and Snedecor to determine their significance.

Statistically significant correlation coefficients were found only in one area, Religion. The coefficient for Section 2A2 ($-.315$) was significant at the .05 level. The coefficient computed for the combined group ($-.271$) was significant at the .01 level. The coefficients computed for Sections 2A1 and 2A3 were not significant. Moreover, Religion was the only area in which the three sections produced a negative correlation. In none of the other areas involved in

this study was a significant coefficient computed either for a particular section or for the combined group.

In the area of English, only one section produced a negative correlation coefficient (Section 2A1, $r = -.213$). The positive correlation coefficients computed for the other two sections approached zero correlation.

Because the Latin achievement test was not proved to be a reliable instrument, the correlation coefficients computed in this area could not be used.

In the area of Biology, the coefficients computed for Sections 2A1 ($r = -.269$) and 2A3 ($r = .208$) taught by the same person, were of similar magnitude. However, since one was negative and the other positive, they tended to cancel each other. The coefficient for Section 2A3, taught by a different instructor, was negative, but of smaller magnitude ($r = -.110$).

With the exception of the coefficient computed for the combined group in the area of Religion, the correlation coefficients for the combined groups approached zero correlation.

B. Juniors

The juniors enrolled in the college preparatory course were divided into two sections, 3A1 which had thirty-four members, and 3A2, which had forty-eight members. The two

sections had the same teacher for each of the four courses involved in the study.

The first area to be discussed with respect to this group is Religion. The relationship between identification of junior students with their Religion teacher and achievement in Religion as measured by the Philadelphia Diocesan Religion examination for juniors is reported and discussed here but cannot be used for conclusions since the junior Religion examination did not prove sufficiently reliable to be trusted as a measure of achievement.

As a group, Section 3A1 had a lower mean "D" score than Section 3A2 had. Therefore this section indicated closer identification with their Religion teacher.

A comparison of standard deviations for the "D" scores shows Section 3A1 indicating greater variation among themselves with respect to identification with their teacher than Section 3A2 showed.

A comparison of individual "D" scores within the sections shows that in Section 3A1 there was a range of 17.49 points as compared to a range of 10.49 points for Section 3A2. Both sections had 0.00 for their lowest "D" score. Each section had one student whose profile on the semantic differential scales coincided perfectly with the profile which he generated for his Religion teacher.

The data dealing with achievement in the junior Religion course is discussed but is not to be considered in general conclusions. Section 3A1, as expected, produced a higher mean achievement score, 89.01. The mean achievement score for Section 3A2 was 85.67. The range of achievement scores was: for Section 3A1, eleven points (83-94); and for Section 3A2 sixteen points (76-92). The standard deviations were 3.07 for Section 3A1 and 3.79 for Section 3A2.

As reported on pages 56-57, when the null hypothesis dealing with the relationship between the juniors' identification scores regarding their Religion teacher and achievement scores attained on the junior Religion examination was tested, neither section produced a correlation coefficient which was significant at either the .05 or .01 level of confidence.

The two sections when tested separately produced positive coefficients. When the sections were combined, however, the entire group produced a negative coefficient. The three coefficients approached zero correlation so closely that the change in direction of the coefficient for the combined group is easily understood.

Summary.- The difference in mean "D" scores for the two sections was 1.22 points. Section 3A1 showed the wider variation among its members, having the larger standard deviation. The difference in range between the two sections was only one point.

With respect to achievement in the junior Religion course, Section 3A1, as expected, had the higher mean score.

The null hypothesis which proposed that there is no significant statistical relationship between identification scores and achievement scores in the area of Religion could not be rejected.

Since the junior Religion examination did not prove to be a reliable instrument for measuring achievement, the results of this part of the study must be disregarded in final conclusions.

The relationship between identification of the junior students with their English teacher and achievement in the Philadelphia Diocesan Examination is now considered.

Section 3A1 indicated, as a group, closer identification with their English teacher than Section 3A2 indicated. The mean "D" scores were 7.44 for Section 3A1 and 6.69 for Section 3A2. A comparison of standard deviations showed that the members of Section 3A1 indicated less variability among themselves than did the members of Section 3A2. The standard deviation for Section 3A1 was 3.06 as compared to a standard deviation of 4.69 for Section 3A2.

The smallest "D" score (0.00, perfect conformity of profiles) was found in Section 3A2. The smallest "D" score found in Section 3A1 was 2.23.

The largest "D" score (23.74) was found in Section 3A2. The largest "D" score found in Section 3A1 was 19.10.

The data dealing with achievement in the junior English course showed Section 3A1 attaining, as a group, greater achievement than Section 3A2 attained. This was in keeping with expectations.

The range of scores was: for Section 3A1, twenty-one points (60-81); for Section 3A2, twenty-four points (54-78).

The standard deviation for Section 3A1 was 4.67 and for Section 3A2 it was 4.04.

As reported on page 57, when the null hypothesis dealing with the relationship between the juniors' identification scores regarding their English teacher and achievement scores attained on the junior English Grammar and Usage examination was tested, the correlation coefficients proved not to be significant at either the .05 or the .01 level of confidence.

The three coefficients were positive. The coefficients computed for Section 3A1 and for the combined group approached zero correlation.

Summary.- Section 3A1 indicated closer identification with their English teacher and less variability among themselves than Section 3A2 showed.

As was expected, Section 3A1 attained higher achievement than Section 3A2 attained.

The null hypothesis concerning relationship of identification to achievement could not be rejected.

The relationship between identification of the junior students with their History teacher and achievement in the Philadelphia Diocesan United States and Pennsylvania History Examination is now considered.

Section 3A2 indicated, as a group, closer identification with their History teacher than Section 3A1 indicated. The mean "D" scores were 9.44 for Section 3A1 and 8.96 for Section 3A2. This was the one case among the juniors in which Section 3A2 had a smaller mean "D" score than that of Section 3A1.

A comparison of standard deviations for "D" scores indicated that the members of Section 3A2 showed less variability among themselves than Section 3A1 showed.

The range of "D" scores for Section 3A1 was 27.45 points and for Section 3A2 it was 21.73 points. The range of scores in Section 3A1 with respect to their History teacher was the widest found for a section in the entire part of the study dealing with juniors.

The smallest "D" score (1.00) was found in Section 3A2. The smallest "D" score found in Section 3A1 was 2.23. The largest "D" score (29.68) was found in Section 3A1. The largest "D" score found in Section 3A2 was 22.73.

The data dealing with achievement in the junior History course showed Section 3A1, attaining as a group, greater achievement than that attained by Section 3A2. Again this result was expected.

The range of scores was: for Section 3A1, fifty points (48-98); and for Section 3A2, thirty-eight points (55-93).

As reported on pages 57-58, when the null hypothesis dealing with the relationship between the juniors' identification scores regarding their History teacher and achievement scores attained on the United States and Pennsylvania History examination was tested, the correlation coefficients proved to be not significant at either the .05 or .01 level of confidence. It is to be noted that when the sections were combined the negative coefficient produced by Section 3A1 and the positive coefficient produced by Section 3A2 tended to cancel each other.

Summary.- This was the one case in which Section 3A2 indicated a closer identification with the teacher than did Section 3A1. Section 3A2 indicated less variability among themselves with respect to "D" scores, having a smaller standard deviation.

With respect to achievement in the junior History course Section 3A1 again attained a higher mean score.

The null hypothesis concerning the relationship of identification to achievement could not be rejected.

The relationship between identification of junior students with their Chemistry teacher and achievement in the Philadelphia Diocesan Chemistry Examination is now considered.

Section 3A1 indicated, as a group, closer identification with their Chemistry teacher than Section 3A2 indicated. The mean "D" scores were 8.64 for Section 3A1 and 9.67 for Section 3A2. This was the highest mean "D" score produced by a junior section.

A comparison of standard deviations for "D" scores indicated that the members of both sections had practically the same amount of variability from the mean in comparing themselves to their Chemistry teacher.

The smallest "D" score (1.41) was found in Section 3A1. The smallest "D" score found in Section 3A2 was 2.23. The largest "D" score (27.87) was also found in Section 3A1. The largest "D" score in Section 3A2 was 24.53.

The data dealing with achievement in the Chemistry course showed Section 3A1, with a mean score of 58.12, attaining as a group, greater achievement than Section 3A2. Again, this result conformed to expectations. Section 3A2 attained a mean score of 47.66.

The range of scores for Section 3A1 was forty-eight points (30-78). For Section 3A2 the range was forty-three points (26-69).

As reported on page 58, when the null hypothesis dealing with the relationship between the juniors' identification scores regarding their Chemistry teacher and achievement scores attained on the Chemistry examination was tested, the correlation coefficients produced by both sections proved to be significant at the .05 level of confidence.

When the two sections were combined a correlation coefficient of $-.091$ was computed for the combined group. This coefficient was not significant at either the .05 or .01 level. The coefficient for the combined groups was interesting inasmuch as it approached zero correlation whereas the coefficients for the sections from which the combined group was derived were significant at the .05 level, one being positive and the other negative.

Summary. Section 3A1 indicated closer identification with their Chemistry teacher than did Section 3A2. The two sections indicated approximately the same amount of deviation from the mean.

Section 3A1 indicated, as expected, a higher achievement in Chemistry than did Section 3A2.

A positive correlation coefficient, significant at the .05 level, was computed for Section 3A1. A negative correlation coefficient, significant at the .05 level was computed for Section 3A2. When the sections were combined a negative coefficient which approached zero correlation was

computed for the entire group. The null hypothesis was rejected for the two sections separately, but could not be rejected for the entire group.

Summary of Data for the Junior Group.- There were eighty-two juniors involved in this study. All were enrolled in the college preparatory course. They had been grouped homogeneously according to scholastic competence into two sections. The more competent section, 3A1, was comprised of thirty-four students. The other students, forty-eight in number, comprised the other section, 3A2. Because some students were not present for certain examinations, their scores could not be used in this study. In the case of the Religion examination, there were three such students, all members of Section 3A1. In the case of History there was one such student. He was a member of Section 3A1. In the case of Chemistry there were three such students, two from Section 3A1 and one from Section 3A2. Therefore, when the groups were combined there were seventy-nine subjects for Religion, eighty-one for History and seventy-nine for Chemistry. The entire eighty-two students were involved in the part of the study dealing with English.

A comparison of "D" scores, the measure of identification, indicated a rather close similarity between the two sections. Section 3A1 produced a lower mean score with respect to their Religion, English and Chemistry teachers.

Section 3A2 produced a lower mean score with respect to their History teacher.

The mean scores and standard deviations for the two sections were similar enough to indicate that differences in scholastic competence among the students did not greatly influence them with respect to identification with the teachers.

Achievement, measured by raw scores attained by the students in the Diocesan examinations in the four courses involved in this experiment, was entirely in conformity with expectations based on the rostering procedure followed at the school.

The relationship of identification to achievement was tested by computing Pearson product-moment correlation coefficients using "D" scores and raw scores from the Diocesan examinations. The coefficients obtained were then compared to charts constructed by Wallace and Snedecor to determine their significance.

Statistically significant correlation coefficients were found only in one area, Chemistry. The coefficient computed for Section 3A1 (.359) was significant at the .05 level. The coefficient computed for Section 3A2 (-.350) was also significant at the .05 level. When the sections were combined the resulting group produced a coefficient (-.091) which approached zero correlation.

Although the coefficients computed with respect to History were not statistically significant, they followed a pattern somewhat similar to that found with respect to Chemistry. This similarity will be discussed in the conclusions drawn from the entire study.

In the case of Religion, the correlation coefficients could not be used since the achievement test was not proved to be a reliable instrument.

In the case of English, none of the coefficients computed were statistically significant. The coefficient computed for Section 3A1 and that computed for the combined group approached zero correlation.

Conclusions drawn from the data obtained in this study will follow, together with recommendations for further investigations.

CONCLUSIONS AND RECOMMENDATIONS

1. Conclusions.

The conclusions drawn from the data examined in this study are:

1. Identification scores produced by the students followed no set pattern relative to the scholastic competence of the various sections.
2. Achievement scores produced by the students followed in general the pattern expected by reason of the method of rostering used by the school.
3. The general null hypothesis which states that "there is no significant relationship between identification scores obtained on the semantic differential scales and achievement scores obtained in a Philadelphia Diocesan Examination of male high school college preparatory students" could not be rejected.

There were two exceptions to the second conclusion.

The mean achievement scores produced by Section 2A2 in both Latin and Biology were lower than those produced by Section 2A3. Since the teachers of Latin and Biology for Section 2A2 were different from the teacher of Latin and the teacher of Biology for the other two sophomore sections, the variation of achievement scores from expectations could have been due to differences in the teachers and in their methods of teaching.

Because the Latin examination was considered to be an unreliable instrument for measuring achievement it was not to be considered in the general conclusions.

There were two exceptions to the third conclusion. Two of the correlation coefficients dealing with the relationship between identification of sophomore students with their Religion teacher and achievement on the sophomore Religion examination were statistically significant. Section 2A2 produced a coefficient which was significant at the .05 level of confidence ($r = -.315$). The combined sophomore group produced a coefficient which was significant at the .01 level of confidence ($r = -.271$).

The fact that the Religion course was taught by a member of a religious order may have had an effect on the students which was different from the effect that other courses would have upon them whether the courses were taught by a member of a religious order or by a layman. It is possible that a sufficient number of students identified with the Religion teacher not so much by reason of his individual characteristics but rather by reason of their being attracted to the religious life as a vocation. If this was the case, then it is understandable that these students would have been interested in the Religion course by reason of their own vocational inclinations.

On the other hand, students who identified with the Religion teacher by reason of his individual characteristics apart from his vocation would be attracted to the religious values which they assumed that the teacher possessed. In this

case the students would pass from behaviour imitative of the model to a frame of reference similar to that of the model. Again interest in mastering the subject matter of the Religion course would be generated in these students.

It is to be noted that this was the one area in which all the sophomore sections produced negative coefficients, indicating positive relationship. Unfortunately, the results of the Religion examination for the juniors had to be rejected by reason of the unreliability of the examination as a measure of achievement. A comparison of the data produced by the juniors with that produced by the sophomores might have shed some light on whether the phenomenon produced by the sophomores in this area was produced also by the juniors or was specific only to the sophomores.

The other exception to the third conclusion was found among the juniors with respect to the relationship between their identification with their Chemistry teacher and their achievement in Chemistry. In this case both junior sections produced coefficients statistically significant at the .05 level of confidence. The coefficient produced by Section 3A1 ($r = .359$) was positive, indicating a negative relationship, and that produced by Section 3A2 ($r = -.350$) was negative, indicating a positive relationship.

The status of the sciences, particularly that of Chemistry, in the minds of the students may provide a clue

as to why this attitude toward the Chemistry course would be different from their attitude toward their other courses of study. The school is located in an industrial area where many chemists and chemical engineers are employed. In order to qualify for scientific and engineering courses in college the students must have high marks in Chemistry. They look upon this course as being practical both as a means of qualifying for the college courses they would prefer and as a means of gaining a livelihood after their college years. They are highly motivated, by reason of their environment, to be as successful as possible in the Chemistry course.

It is possible that the high achieving members of Section 3A1 had sufficient ability and motivation from sources other than identification with the teacher to be able to succeed in the Chemistry course. For these reasons many of the students of this section may have felt independent of their teacher to such an extent that the need to identify with him was unnecessary for their success in this course. Other students of the same section, lacking the factors which the more successful students possessed, may have depended on identification with the teacher as a means of obtaining the goal (mastery of the Chemistry course) possessed by the teacher. This is a possible explanation of the negative relationship produced by Section 3A1.

On the other hand, those members of Section 3A2 who were successful within their section may have depended upon identification with the teacher as a means of obtaining their goal. The less successful students of Section 3A2, lacking close identification with the teacher, and possibly also lacking ability and motivation to attain a mastery of the Chemistry course, generally attained the lowest scores. This is a possible explanation of the positive relationship produced by Section 3A2.

The tendency of junior sections to produce opposite correlation coefficients of similar magnitudes which was apparent in the area of Chemistry is once more observed in the area of History. In this case, however, Section 3A1 produced the negative coefficient ($r = -.165$) and Section 3A2 produced the positive coefficient ($r = .196$). Neither of these coefficients was statistically significant at either the .05 or the .01 level of confidence.

The same tendency was observed with respect to the correlation coefficients produced by sophomore Sections 2A1 and 2A3 in the area of Biology. Section 2A1 produced a negative coefficient ($r = -.269$) while Section 2A3 produced a positive coefficient ($r = .208$). When the sections were combined in all of these three cases (junior Chemistry, junior History and sophomore Biology) the coefficients produced approached zero correlation.

While the influence of identification with the teacher tends not to be significant with respect to groups of students, there is evidence that identification with the teacher is related to achievement for some individual students. The identification phenomenon might be investigated further to determine whether it is a factor to be considered in future rostering procedure.

The explanations offered here are in keeping with Kagan's theory as to why the students would tend to identify with the model and with Lazowick's theory as to how the identification process takes place.

The hypotheses tested here were formulated with Kagan's and Lazowick's theories of identification serving as the basis for interpreting the process of identification with the teacher. Kagan defined identification as an acquired cognitive response within the subject whereby some of the attributes, motives and characteristics of the model become part of the subject's psychological organization. He offered as motivation for development of identification the desire to command or experience certain goal states such as mastery of the environment. As used in this study, mastery of the subject matter was considered to be a part of mastery of environment.

Lazowick proposed the theory that meanings or sub-sets of behavior (which became means of self-stimulation to further behavior) were learned in the identification process. Then

the relation between the model's set of meanings and the subject's set of meanings was what he meant by identification. The measure of similarity between the student's meanings and those which he perceived as belonging to each teacher (the "D" score) was the measure of identification.

Since the identification scores followed no set pattern in relation to the scholastic competence of the various sections it is to be inferred from this study that scholastic competence has very little influence on the forming of identification by students.

The fact that the general null hypothesis could not be rejected seems to indicate that for a group the desire to master subject-matter was not a sufficiently strong motive for forming an identification with the teacher. While the entire study does not seem to contribute to Kagan's theory concerning the motive for identification, yet the exceptions found in sophomore Religion and in junior Chemistry may support his theory.

The fact that Section 3A1 produced a positive coefficient and that Section 3A2 produced a negative coefficient might strengthen the theory in that other factors, e.g., superior ability, could render identification with the teacher unnecessary as a means of achieving mastery of subject-matter, but the lack of these other factors could lead a student to rely on identification as a means of attaining this goal.

It is to be noted that Section 2A2 produced the only coefficient in sophomore Religion which was significant at the .05 level. As seen in the case of junior Chemistry, identification with the teacher where it is significant seems to be common neither to the high achievers nor to the low achievers but to a middle group.

In the case of sophomore Religion, both Lazowick's and Kagan's theories seem to apply quite well. The attributes and characteristics which the student would be expected to perceive as belonging to a member of a religious order and the meanings which he would attribute to such a person and with which he identified would be expected to be related to his achievement in a Religion course. The fact that only in the area of sophomore Religion did all the sections produce a negative coefficient (meaning a positive relationship) and the combined sections produce a coefficient significant at the .01 level of confidence seems to confirm both Kagan's and Lazowick's theories.

2. Recommendations.

A study in depth of the relationship between identification of student with teacher and achievement should be conducted in a group of schools to determine whether or not the relationship is significant in a larger population.

A study of the relationship between identification of student with teacher and achievement should be conducted in a number of situations in which a priest or a member of a religious order teaches Religion and another course of a non-religious nature to the same group of students. The purpose of such a study would be to investigate whether or not the nature of the course is the reason for significant correlation.

A study in depth of the relationship between identification of student with teacher and achievement should be conducted with respect to the sciences (Physics, Chemistry, Biology). The purpose of this study would be to investigate whether the pattern produced by the two junior sections in the present study is common to high school science students or is peculiar only to the junior group of the school involved in the present experiment.

A study in depth of the relationship between identification of student with teacher and achievement should be conducted in a group of Philadelphia diocesan high schools for girls. The purpose of this study would be to investigate whether or not sex differences would show up differences in the influence of identification on achievement.

A study in depth of the relationship between identification of student with teacher and achievement should be conducted in a group of public schools. The purpose of such a study would be to investigate the possibility of differences

of the influence of identification on achievement among groups from Catholic and public schools, since the two systems have different approaches to learning.

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A report of a study to investigate relationships of three types of measures of two aspects of parental identification (perceived similarity and degree of involvement with a parent). Perceived similarity was measured directly by an interview item and indirectly by the semantic differential. Involvement was measured directly by another interview item and by fantasy with cards from the TAT or MAPS. Subjects were thirty women and sixty men, all college students. Findings were: (a) direct and indirect measures of perceived similarity were significantly related; (b) for men, direct and fantasy measures tended to be significantly related; and (c) for neither sex was the direct measure of perceived similarity significantly related to the fantasy measure of involvement.

Bronfenbrenner, Urie, "Freudian Theories of Identification and Their Derivatives", in Child Development, Vol. 31, 1960, p. 15-40.

A survey of Freud's theories of identification, which the author finds not consistent with each other, and a review of criticisms and modifications of Freud's theories made by Stokes, Mowrer, Sanford, Sears and Parsons. The author recommended that research data be collected to see which of the phenomena proposed by the theorists really exist.

Crites, John O., "Parental Identification in Relation to Vocational Interest Development", in Journal of Educational Psychology, Vol. 53, 1962, p. 262-270.

A report of a study to investigate the relationship between identification with parents and vocational interest pattern. The measure of identification was the semantic differential. The measure of vocational interest was the Strong Vocational Interest Blank. Subjects were three groups of college students, two groups numbering one hundred subjects and the third numbering one hundred and fifty. Results indicated that a son's identification with both of his parents significantly affects the patterning of his vocational interests but that his identification with his father is the more important.

Erikson, Erik H., "Identity and the Life Cycle", in Psychological Issues, International Universities Press, 1959, p. 1-171.

An essay dealing with identity formation viewed as an evolving configuration gradually established by the integration of constitutional characteristics, needs, drives, identifications, defenses, sublimations and consistent roles so that the final identity, the formation of which terminates the adolescent period, but which continues to develop throughout life, is more than the sum of significant identifications.

Halper, Malcolm M., "Learning Theory and the Self Concept", in Journal of Abnormal and Social Psychology, Vol. 51, 1955, p. 184-194.

A study using a conception of the self-concept based on reinforcement learning theory, was designed to test the influence of reinforcement on the formation of the self-concept. Hypotheses tested were concerned with familial influences on the formation of the self-concept and with the relationship of childrens' self-concepts to childrens' social status. The influence of mothers' approval was found to be significantly related to the boys' modeling themselves after their father.

Kagan, Jerome, "The Concept of Identification", in Psychological Review, Vol. 65, 1958, p. 296-305.

The author defined identification as an acquired cognitive response. The subject acts as if some of the characteristics of the model belong to the subject himself. Identification is not an all or nothing process. The subject can identify with several models. Two motives for identification were offered--mastery of goal states possessed by the model and love nurture. Perceived similarity between subject and model with respect to attributes was considered a means of reinforcing identification. Overt behavior was not considered the best measure of identification.

Lazowick, Lionel M., "On the Nature of Identification", in Journal of Abnormal and Social Psychology, Vol. 51, 1955, p. 175-183.

A mediation theory of identification, adapted from Osgood's theory concerning the acquisition of meanings, was proposed to interpret a type of relationship between subjects (thirty undergraduate university students) and models (both parents of each student). The relationship between identification with parents and anxiety was investigated. Real and inferred identification were measured by use of semantic differential scales. Anxiety was measured by use of Grice's revision of the Taylor Manifest Anxiety Scale. Conclusions

were (a) that a gross inverse relationship exists between identification and anxiety; (b) that males, as a group, form stronger identifications than females; (c) that identifications within family groups are greater than those between family groups. From the findings of the study the author concluded that semantic differential scales could be used to investigate the nature of identification as theorized in the article.

Martin, William E., "Learning Theory and Identification: III The Development of Values in Children", in Journal of Genetic Psychology, Vol. 84, 1954, p. 211-217.

An essay which looks upon the acquisition of values as the product of learning reinforced by rewards. Although identification may be involved as the process whereby the values are acquired, an alternative conscious learning process is suggested.

Osgood, Charles E., George J. Suci and Percy H. Tannenbaum, The Measurement of Meaning, Urbana, University of Illinois Press, 1957, 342 p.

A progress report concerning the development of an objective measure of meaning is presented. Meaning is identified as a representational mediational process by which a sign elicits behaviors corresponding to those elicited by a significate. Meaning is measured by use of bipolar adjectives on a seven-step scale, the adjectives representing evaluation, potency and activity factors which give dimensions of semantic space so that the meaning of a sign becomes a point in the semantic space. Reliability criteria and validity of the instrument are discussed. Some fifty studies in which the semantic differential scales were used to measure attitudes, personality traits, changes during psychotherapy, aesthetics, identification and the influence of advertising are reported. Further uses and refinements of the semantic differential are suggested.

Sopchak, Andrew L., "Parental 'Identification' and 'Tendency Toward Disorders' as Measured by the Minnesota Multiphasic Personality Inventory", in Journal of Abnormal and Social Psychology, Vol. 47, 1952, p. 159-165.

This study, involving college undergraduates, tested a psychoanalytic hypothesis that identification with parents leads to normal personality development and adjustment. The measure of identification was similarity of scores obtained on the MMPI by the subject (a) taken for himself, (b) taken as he thought his father would take it, and (c) taken as he thought his mother would take it. The conclusion was that as a group those who identify highly with their parents tend to

normality as measured by the MMPI and that abnormality as measured by the same instrument is associated with those who do not identify with parents.

Stoke, Stuart A., "An Inquiry into the Concept of Identification", in Journal of Genetic Psychology, Vol. 76, 1950, p. 163-189.

An essay in which the author, while recognizing identification as a fact, rejected the Oedipus complex in explaining the etiology of the phenomenon. He suggested the biological fact of sex, social pressures, acquaintance with the model, and strong needs of the child as factors influencing identification.

Winter, William D., "Values and Achievement in a Freshman Psychology Course", in Journal of Educational Research, Vol. 54, 1961, p. 183-186.

A report of a study to investigate the relationship between the similarity of thirty-four students' values to those of their instructor and academic achievement in his class. A modified form of the semantic differential scales was used to measure similarity of values. Test grades attained in a final examination in the course were used as the measure of achievement. A correlation, significant at the .01 level of confidence was obtained.

APPENDIX 1

INSTRUCTIONS AND BIPOLAR ADJECTIVES OF SEMANTIC
DIFFERENTIAL

APPENDIX 1

TEST INSTRUCTIONS

The purpose of this study is to measure the meanings of certain things to various people by having them judge them against a series of descriptive scales. In taking this test, please make your judgments on the basis of what these things mean to you. On each page of this booklet fill in the concept to be judged. Beneath it is a set of scales. Rate the concept on each of these scales in order.

Here is how you are to use these scales: if you feel that the concept at the top of the page is very closely related to one end of the scale, you should place your check-mark as follows:

Fair X : _____ : _____ : _____ : _____ : _____ : _____ : Unfair

or

Fair _____ : _____ : _____ : _____ : _____ : _____ : X : Unfair

If you feel that the concept is quite closely related to one or the other end of the scale (but not extremely), you should place your check-mark as follows:

Strong _____ : X : _____ : _____ : _____ : _____ : _____ : Weak

or

Strong _____ : _____ : _____ : _____ : _____ : X : _____ : Weak

If the concept seems only slightly related to one side as opposed to the other side (but is not really neutral), then

Active : : X : : : : Passive

02

Active : : : : X : : Passive

The direction toward which you check, of course, depends upon which of the two ends of the scale seem most characteristic of the thing you're judging. If you consider the concept to be neutral on the scale, both sides of the scale equally associated with the concept, or if the scale is completely irrelevant, unrelated to the concept, then you should place your check-mark in the middle space:

Safe : : X : : Dangerous

IMPORTANT: (1) Place your check-marks in the middle of the spaces, not on the boundaries:

THIS NOT THIS

- (2) Be sure you check every scale for every concept--do not omit any.
- (3) Never put more than one check-mark on a single scale.

Sometimes you may feel as though you've had the same concept before on the test. This will not be the case, so do not look back and forth through the items. Do not try to remember how you checked similar items earlier in the test. Make each item a separate and independent judgment. Work at fairly high speed through this test. Do not worry or puzzle over individual items. It is your first impressions, the

immediate "feelings" about the items, that we want. On the other hand, please do not be careless, because we want your true impressions. ARE THERE ANY QUESTIONS?

NAME _____

SECTION _____

CONCEPT Myself

Fast	:	:	:	:	:	:	: Slow
Good	:	:	:	:	:	:	: Bad
Delicate	:	:	:	:	:	:	: Rugged
Deep	:	:	:	:	:	:	: Shallow
Passive	:	:	:	:	:	:	: Active
Unfair	:	:	:	:	:	:	: Fair
Sharp	:	:	:	:	:	:	: Dull
Rich	:	:	:	:	:	:	: Poor
Weak	:	:	:	:	:	:	: Strong
Cold	:	:	:	:	:	:	: Hot
Angular	:	:	:	:	:	:	: Rounded
Heavy	:	:	:	:	:	:	: Light
Profane	:	:	:	:	:	:	: Sacred
Valuable	:	:	:	:	:	:	: Worthless
Soft	:	:	:	:	:	:	: Hard

NAME _____

SECTION _____

CONCEPT by Religion Teacher

Fast	:	:	:	:	:	:	Slow
Good	:	:	:	:	:	:	Bad
Weak	:	:	:	:	:	:	Strong
Heavy	:	:	:	:	:	:	Light
Cold	:	:	:	:	:	:	Hot
Unfair	:	:	:	:	:	:	Fair
Angular	:	:	:	:	:	:	Rounded
Valuable	:	:	:	:	:	:	Worthless
Soft	:	:	:	:	:	:	Hard
Passive	:	:	:	:	:	:	Active
Sharp	:	:	:	:	:	:	Dull
Deep	:	:	:	:	:	:	Shallow
Profane	:	:	:	:	:	:	Sacred
Rich	:	:	:	:	:	:	Poor
Delicate	:	:	:	:	:	:	Rugged

NAME _____

SECTION _____

CONCEPT My Biology Teacher

Sharp	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	Dull
Valuable	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	Worthless
Soft	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	Hard
Heavy	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	Light
Passive	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	Active
Profane	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	Sacred
Angular	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	Rounded
Rich	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	Poor
Delicate	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	Rugged
Cold	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	Hot
Fast	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	Slow
Deep	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	Shallow
Unfair	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	Fair
Good	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	Bad
Weak	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	Strong

Note: The students rated the concepts in the order followed in this appendix. However, the order of the scales was rotated so that the students had the scales in different order. This was done to avoid transfer efforts as much as possible.

APPENDIX 2

**COMPILED "D" SCORES AND RAW ACHIEVEMENT
SCORES**

APPENDIX 2

Compiled Data for Section 2A1.

Name	Religion		English		Latin		Biology	
	"D"	Raw	"D"	Raw	"D"	Raw	"D"	Raw
Bukowy, Stephen	3.16	96	7.54	63	5.38	55	5.47	59
Cavalier, Richard	5.83	91	19.20	62	5.91	59	3.00	62
Clements, John	7.07	92	9.53	61	6.06	40	5.91	55
Coveleski, Donald	7.87	96	11.74	64	6.40	35	11.66	73
Daly, Francis	12.24	91	6.40	67	12.32	35	25.15	61
Di Nicola, Arthur	11.74	93	12.88	78	4.47	70	6.40	88
Piumara, James	17.20	88	13.56	68	15.68	57	8.06	48
Gartside, Thomas	9.05	87	10.24	66	5.09	59	6.08	74
Garkia, Ralph	20.83	82	25.76	58	12.44	49	5.09	58
Gorbey, Timothy	6.48	92	9.84	70	3.00	56	7.00	66
Graf, John	9.43	80	12.36	66	7.07	38	15.55	46
Green, Francis	4.24	92	6.16	67	11.40	52	6.16	73
Grush, Bernard	6.08	93	10.44	68	8.77	52	7.28	74
Halversen, Olaf	11.22	92	4.47	57	9.69	37	11.48	60
Hayden, Robert	8.30	88	21.77	49	5.38	45	12.20	54
Hentosh, David	5.83	78	7.68	61	6.40	47	5.19	54
Horwitz, Louis	5.47	93	14.14	75	14.00	65	9.27	70
Jennings, Joseph	7.87	84	6.40	56	8.18	56	10.81	62
Karpovich, Ronald	3.82	92	12.20	64	7.48	57	3.74	75
Koziol, Rudolph	2.00	96	8.30	75	2.44	72	5.65	78
Krasowski, Joseph	7.34	88	11.87	60	6.16	35	4.35	70
Lamb, Joseph	15.55	87	11.57	68	3.31	42	5.63	59
Leary, James	10.86	86	10.04	63	10.34	46	6.08	62
Leyman, Philip	18.62	92	12.68	64	6.16	63	7.68	58
Macknis, Joseph	6.06	94	14.27	68	9.43	46	16.40	59
Magrogan, Francis	12.04	84	12.32	62	11.09	35	11.74	54
Matwiejewicz, John	5.00	79	9.00	67	17.57	48	11.22	56
McKeown, Edward	5.28	90	10.24	71	5.38	65	6.40	70
Malchior, Stephen	7.34	90	11.18	66	9.11	42	7.68	73
Melvin, Charles	9.48	94	20.49	66	10.86	57	7.93	75
Moretti, Ronald	21.27	78	25.49	57	9.84	34	7.34	50
Murphy, Thomas	10.67	96	7.28	70	8.60	47	4.89	62
Osborn, Mark	16.61	96	5.00	67	6.78	56	19.60	50
Reek, Edward	9.43	87	9.48	64	6.78	47	6.55	52
Sheridan, William	11.18	87	5.83	77	15.29	54	13.60	72
Stewart, Robert	16.26	86	26.41	70	11.53	48	16.94	71
Strocke, Raymond	9.27	86	13.92	76	1.73	54	4.69	74
Sycx, George	10.72	94	12.88	78	6.40	68	8.62	62
Welc, John	6.00	91	4.69	67	7.68	55	11.18	71
Zwizanski, Kenneth	7.48	85	12.08	67	6.78	35	8.12	63

Compiled Data for Section 2A2.

Name	Religion		English		Latin		Biology	
	"D"	Raw	"D"	Raw	"D"	Raw	"D"	Raw
Abramowicz, Carl	7.14	82	5.74	56	9.84	34	8.06	67
Baxter, Raymond	5.00	89	5.38	68	15.81	34	6.32	62
Boyle, John	4.12	87	13.78	64	12.53	30	3.16	60
Boyda, James	3.16	84	7.34	68	4.89	24	10.67	54
Bruno, Frank	6.70	90	7.48	68	4.24	28	4.24	59
Burns, Albert	7.14	82	10.67	64	11.09	36	2.23	56
Cleary, Paul	1.41	93	5.91	77	12.84	29	3.00	72
Coombs, George	5.00	88	7.87	58	5.47	32	6.40	44
Disciascio, Paul	11.44	87	6.40	58	5.00	27	7.28	48
Dodds, Edward	8.60	78	8.60	68	17.57	25	4.58	36
Eckenroth, George	10.29	86	8.27	58	3.00	33	11.00	55
Edge, Terrence	5.47	98	10.24	68	11.44	28	5.74	44
Friel, Michael	14.49	91	8.77	75	7.28	34	4.58	59
Feltz, James	7.00	84	7.34	48	7.48	30	10.24	44
Glass, John	3.31	88	5.19	50	6.40	24	3.31	44
Glatts, John	8.66	83	2.44	58	7.00	26	17.72	55
Gornik, Joseph	5.91	92	6.70	68	4.12	26	12.56	50
Healy, Christopher	14.52	82	11.87	68	13.78	28	10.86	55
Henderson, George	5.38	92	8.48	68	9.48	30	4.24	51
Hesling, Ernest	5.00	86	6.55	58	10.72	26	6.40	53
Higgins, John	10.63	80	6.16	55	8.12	32	4.69	60
Hines, John	6.40	93	10.29	56	13.07	33	9.27	54
Humphrey, Raymond	20.22	82	23.15	68	27.76	30	20.09	51
Judge, James	11.74	77	4.47	58	3.16	20	5.09	44
Kiley, Ronald	20.02	79	6.40	68	8.30	28	6.40	51
Kogut, Robert	21.21	82	4.69	68	18.78	24	13.74	57
Lastowka, Michael	9.53	80	7.87	64	7.34	28	10.86	48
Lomas, Hugh	19.51	81	6.40	68	9.00	27	3.46	59
Miller, Thomas	6.48	89	7.07	58	8.60	27	4.89	61
Murphy, Michael	11.57	92	4.35	77	11.70	30	12.36	57
Parylak, Michael	10.81	74	14.56	50	5.83	30	5.83	29
Persia, Thomas	11.78	86	11.87	68	13.15	30	10.86	57
Renda, John	9.48	93	10.19	64	8.48	27	11.35	40
Rossi, Joseph	18.86	88	18.16	64	13.63	30	13.60	29
Tamavich, Stanley	4.69	80	6.40	55	3.74	24	10.77	32
Troy, Dennis	4.00	92	5.83	64	12.44	30	8.54	54
Vandergrift, Gerald	6.63	81	4.69	68	9.84	25	21.95	59
Walkowski, Thomas	6.78	77	8.12	58	10.65	27	20.09	45
Whitely, Robert	10.44	90	6.08	53	10.65	24	12.68	50
Zatkos, Lee	8.12	83	6.40	64	10.04	26	3.00	46

Compiled Data for Section 2A3.

Name	Religion		English		Latin		Biology	
	"D"	Raw	"D"	Raw	"D"	Raw	"D"	Raw
Berridge, Edward	13.37	77	8.60	51	10.19	34	6.70	47
Bobak, George	11.48	75	9.85	44	3.00	33	4.24	44
Bogucki, Robert	9.43	76	10.05	60	12.84	39	4.41	65
Boyle, Jeffrey	13.60	77	6.16	49	4.24	36	7.07	51
Brett, Michael	9.94	73	9.70	61	11.57	37	6.36	70
Brook, Timothy	1.41	72	12.85	61	6.16	32	9.11	62
Brown, Joseph	13.60	80	16.91	41	17.37	32	14.31	41
Bruno, Francis	20.12	80	17.63	49	11.22	34	15.65	58
Connolly, William	9.53	89	8.36	55	8.24	37	10.04	65
Connors, William	7.87	84	4.24	63	6.16	36	5.38	53
Cowan, William	12.68	78	14.07	44	12.72	33	5.09	49
Czack, Joseph	5.91	72	6.48	50	3.00	32	2.00	51
Davish, Patrick	7.68	79	7.68		13.03	37	13.03	55
Dunlap, James	11.87	72	7.14	42	3.74	32	3.31	47
Elliott, James	9.21	76	10.95	52	9.89	39	11.57	53
Flynn, James	10.01	77	1.00	46	5.83	41	13.60	60
Garay, Louis	24.37	74	7.87	59	20.97	37	2.44	55
Greene, Thomas	15.42	79	11.00	51	7.07	44	12.56	62
Guyer, Martin	4.58	84	4.00	62	5.38	36	5.09	60
Harbison, Dennis	4.35	78	15.03	59	10.63	33	17.02	70
Joyce, Terrence	3.16	83	5.38	36	7.34	34	14.76	67
Liberatore, Michael	23.02	70	11.57	54	12.40	38	13.15	60
MacDonald, Charles	9.27	83	10.29		8.30	35	17.07	53
Maciejczyk, James	12.32	90	12.68	48	3.16	50	12.08	75
McCracken, William	9.27	77	3.46	44	7.14	35	5.48	58
McGrath, Michael	14.45	83	5.38	58	6.70	33	5.00	72
Nichols, William	6.16	76	8.30	53	7.34	37	6.70	58
Osborne, Robert	7.00	81	6.48	63	7.34	30	4.35	70
Pacenza, Thomas	7.34	81	6.40	59	16.43	34	6.18	51
Polizza, John	9.16	63	5.47	48	7.14	36	2.44	62
Porter, Donald	23.02	78	15.16	46	15.65	39	1.00	62
Rainey, Gerald	19.74	66	11.87	48	16.47	38	12.68	55
Rehrmann, James	5.09	81	4.12	55	1.00	40	8.77	70
Schapperle, John	14.17	81	13.07	54	3.16	49	5.83	60
Schwarz, Daniel	11.18	72	11.74	67	4.47	36	7.48	41
Shewalter, Francis	9.27	78	3.74	47	9.40	38	7.68	65
Sutsko, Joseph	23.16	74	13.60	50	10.72	32	14.35	60
Teofilak, Walter	6.70	86	3.00	52	9.00	47	12.80	58
Twardowski, Thomas	12.08	56	12.88	54	8.83	36	12.88	60
Vasquez, John	10.24	78	4.58	47	14.96	34	5.38	53
Verga, Louis	2.23	87	5.47	51	8.30	35	12.36	58
Weroniak, John	12.76	80	12.24	48	12.80	46	11.44	53
Zosh, Thomas	13.11	87	10.81	57	13.30	34	19.20	75

Compiled Data for Section 3A1.

Name	Religion		English		History		Chemistry	
	"D"	Raw	"D"	Raw	"D"	Raw	"D"	Raw
Ashbridge, Earl	9.11	86	7.87	70	8.12	86	10.34	39
Balled, John	16.52	88	16.40	68	29.68	91	7.14	61
Berkenbaugh, James	4.47	93	3.16	74	10.67	74	7.00	67
Borek, Stanley	6.16	91	4.24	68	13.00	77	3.00	72
Buccella, Michael	14.89	86	7.48	74	14.89	48	5.74	30
Burge, Edward	17.49	93	13.34	70	12.88	86	11.18	71
Campion, George	8.06	92	8.06	71	11.78	79	6.40	75
Cavalier, Steven	6.70	89	7.28	74	7.34	88	5.09	46
Chopko, Edmund	13.07	91	5.38	76	2.44	85	8.18	60
Cullen, James	7.87	92	11.44	67	10.19	84	6.63	58
Davis, John	5.09	90	5.00	71	12.36	88	4.69	52
Ferguson, William	0.00	92	5.91	73	2.82	92	7.00	59
Galati, Ralph	6.32	87	4.12	61	5.83	74	4.12	53
Glodek, Stephen	7.87	96	9.48	81	11.00		27.87	68
Hafich, Michael	4.12	90	2.23	66	9.00	81	3.16	56
Holmes, John	3.00	91	5.38	78	3.74	85	11.53	
Imber, Craig	4.12	87	8.77	60	10.04	91	3.74	45
Keller, William	5.00		4.58	75	7.87	89	19.54	
Landino, Thomas	11.00	94	12.88	71	5.38	98	12.24	70
Martin, Paul	16.06	88	19.10	70	14.86	75	22.47	64
Miller, Michael	11.70	90	12.08	71	10.67	68	12.68	65
Mulhearn, Daniel	14.17	93	3.74	71	4.35	84	7.28	58
Nurthen, William	3.00	88	6.00	70	2.23	82	5.09	56
Pierdomenico, L.	9.94	86	9.79	73	7.81	80	8.77	54
Scherer, James	5.09		9.27	81	12.12	94	13.19	78
Shellem, James	5.83	83	2.23	70	27.29	78	9.69	50
Simon, Richard	3.00	88	5.47	65	3.16	72	4.35	41
Sincavage, John	3.47	89	3.00	67	11.35	75	1.41	50
Talbot, James	10.24	92	7.00	75	3.31	90	7.87	66
Tourish, Thomas	10.77	92	5.74	72	5.91	93	7.68	69
Trzeciak, Edward	5.47	93	7.14	76	6.40	85	16.49	58
Wesolowski, Edward	6.16		7.87	72	7.87	80	7.87	52
Yarusinski, Joseph	2.44	91	3.60	70	6.40	78	9.84	59
Ziegler, Karl	7.81	83	7.81	65	9.48	74	8.30	58

Compiled Data for Section 3A2.

Name	Religion		English		History		Chemistry	
	"D"	Raw	"D"	Raw	"D"	Raw	"D"	Raw
Abbott, Dennis	2.24	80	5.83	54	5.09	55	4.13	48
Atkinson, William	17.11	90	18.43	71	6.78	93	5.09	69
Bernasz, Joseph	11.70	85	12.20	63	12.20	74	10.67	35
Benditt, Francis	14.56	85	23.79	67	10.77	61	23.74	39
Bienkowski, Frank	0.00	85	12.00	60	11.44	71	5.47	56
Blohm, Raymond	18.49	76	19.23	66	14.03	69	13.41	41
Brogan, Michael	10.95	91	14.21	78	21.00	76	14.31	36
Brown, Thomas	9.48	83	13.96	62	7.00	63	7.21	38
Brown, William	10.77	81	10.63	67	7.81	77	17.54	41
Butler, Richard	11.22	87	5.74	70	7.00	84	8.66	49
Chieffo, Ralph	9.43	89	4.12	70	6.55	93	3.74	59
Collins, George	10.34	86	7.07	72	12.68	77	15.77	53
Conroy, Terrence	14.35	87	11.70	61	5.38	70	9.40	41
Cook, Dennis	10.81	78	5.47	66	7.07	74	9.43	49
Crabtree, John	7.68	82	7.81	64	7.14	70	10.29	49
Deldeo, Francis	5.47	86	11.22	73	5.09	71	14.14	49
Dempsey, Joseph	14.76	87	13.60	67	10.86	60	24.53	26
Dinski, Edward	11.18	85	5.09	62	18.49	75	7.74	
Donato, Lawrence	8.24	90	5.91	60	2.23	63	3.00	46
Ferguson, Joseph	10.48	78	9.21	62	4.47	63	7.21	51
Fitz, Richard	10.44	88	5.38	60	6.08	64	10.08	46
Flannery, John	11.57	92	3.31	70	14.03	74	7.54	39
Frascino, Anthony	6.40	89	14.07	70	14.89	72	20.63	47
Georgini, John	4.58	87	11.22	70	14.45	80	12.40	30
Glass, Robert	12.84	83	9.94	62	9.89	70	5.74	50
Guyer, Walter	10.04	86	6.48	66	12.04	77	10.77	58
Heron, Timothy	6.63	87	7.61	62	4.58	78	5.83	56
Jabson, John	9.00	92	9.27	61	5.74	69	11.74	45
Kane, Michael	9.89	85	15.68	74	4.89	59	5.09	29
Kennedy, George	4.58	83	9.69	69	5.74	69	2.44	58
Kupsis, Charles	10.48	87	4.47	68	6.48	68	4.58	49
Litwa, James	6.78	82	4.12	62	5.47	69	10.48	40
Logan, Chaires	15.39	87	12.88	71	5.83	75	15.16	57
Malis, Stanley	11.22	86	9.84	76	22.73	87	21.56	62
Marchol, Paul	7.61	87	4.00	65	1.73	76	2.23	67
McHale, Joseph	6.92	81	3.16	70	5.00	89	3.74	48
McKeon, Thomas	3.74	83	4.24	59	6.00	73	3.00	63
Mercadante, John	6.78	91	5.00	66	11.53	77	4.12	40
Macrelli, Michael	8.60	92	7.07	71	13.49	60	8.30	43
Notte, John	3.16	87	0.00	69	7.28	68	10.01	49
Robinson, James	5.00	86	5.74	65	10.04	72	4.58	53
Scott, Paul	12.04	82	8.83	65	4.69	79	7.61	48
Slivenski, James	7.28	88	3.74	69	11.35	72	12.15	41
Troy, Edward	14.86	87	8.12	72	2.23	66	7.61	63
Ward, John	7.48	86	3.16	63	1.00	88	3.31	59
Witkofsky, Joseph	2.44	80	7.00	64	18.46	87	19.26	44
Wolenski, Stanley	7.87	89	9.48	71	17.26	70	10.24	46
Wood, Anthony	12.68	88	6.63	68	4.00	72	5.91	35

APPENDIX 3

ABSTRACT OF

Student-Teacher Identification and Academic Achievement

APPENDIX 3

ABSTRACT OF

Student-Teacher Identification and Academic Achievement.¹

The problem was to investigate the relationship, if any, between identification of students with teachers and achievement by students in the courses of study presented by the teachers.

It was theorized that the process of identification entailed the acquisition by the students of meanings or frames of reference similar to those perceived by the students as belonging to the teachers. Motivation for forming identification was assumed to be the desire to gain goal states (mastery of subject-matter) possessed by the teachers.

Subjects were sophomores and junior students enrolled in the college preparatory course of a Philadelphia Diocesan high school for boys. The sophomore group was divided, according to scholastic competence into three sections. The junior group was divided according to the same criterion into two sections.

The relationship of identification to achievement was tested in eight areas, four using sophomore students and four

¹ John H. Walsh, doctoral thesis presented to the Faculty of Psychology and Education of the University of Ottawa, Ontario, 1966, x-114 p.

using junior students. Identification was measured by use of "D" scores, the measure of the degree of similarity between the profiles which each student generated on semantic differential scales for the concept "myself" and the concept representing each of his teachers. Achievement was measured by raw scores attained by each student on diocesan examinations. Four courses of study were involved for each group. The results of one diocesan examination for sophomores and of one diocesan examination for juniors were disregarded in the conclusions because these examinations were not proved to be reliable measures of achievement.

The relationship of identification to achievement was tested by computing Pearson product-moment correlation coefficients comparing "D" scores to achievement scores. Coefficients were computed for each section and for the combined groups of sophomores and of juniors.

The results showed that the relationship between identification scores and achievement scores was, with two exceptions, not statistically significant at either the .05 or .01 level of confidence. The exceptions were found in the area of sophomore Religion in which one section and the combined group produced statistically significant coefficients, and in junior Chemistry in which two sections produced statistically significant coefficients, one positive and the other negative.

It was concluded that, with the exception of the areas of sophomore Religion and junior Chemistry, there was no significant relationship between identification with the teacher and achievement as measured in this study. Suggestions concerning the possible influence of the Religion teacher's vocation on the students' attitude toward the subject-matter were proposed. Suggestions concerning the status of the sciences in the minds of the students were offered as being a possible influence leading some students to identify with their Chemistry teacher.

Recommendations were made that the relationship between identification with the teacher and achievement be tested with larger groups of students, with groups of girls and with groups of public school students as subjects.