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A LONGITUDINAL STUDY OF SELF-CONCEPT IN LATE ADOLESCENTS

A Thesis

Presented to

the Graduate Faculty

Central Washington State College

In Partial Fulfillment

of the Requirements for the Degree

Master of Education

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by

William Davy Thomas

August, 1969

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Howard B. Robinson

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Chapter 1

INTRODUCTION

The last fifteen years have seen a steady increase of published literature on the self and self-concept. According to Wylie (1961), since 1949 "there has been an increasingly large output of investigations [p. 2]" in the field of the self. This growth of studies on the self in the last twenty years proved the prediction of Allport (1943) to be correct when he forecast "that self psychology in the twentieth century will flourish increasingly [p. 476]."

The last five years have seen four books published with the self as a dominant, if not central, theme. Rogers (1961a), who formulated a personality theory centered about the self, published a book giving his latest thinking. Wylie (1961), already mentioned, brought out a book that has attempted to integrate existing research carried out on the self-concept. Gordon (1962) published a book on individual development which stresses the growth of the self. Hamachek (1965) published a book of readings of significant articles on the self and self-concept. These selected papers extend over the last twenty-five years.

Gordon (1962), in his individual development book, used a new approach of relating self-development to development in other areas such

as physical growth. Because there is much that is unknown about self-development, he continually stressed the need for research in this field. This present study will attempt to supply some of this missing information.

Chapter 2

PROBLEM

While attending the University of Alberta, Taschuk (1957b) developed an inventory of seventy-seven items to analyze the self-concept of adolescent students. This inventory was revised by D. W. Hepburn in an unpublished study where more than forty adolescent students were interviewed to find out what the items meant to them. Seven of the items were dropped from the original inventory because they were ambiguous. The result of this revision was The Taschuk-Hepburn Inventory of Self. In 1958, Clarke and Taschuk gave the inventory to 426 students in the grade ten class at the Eastglen Composite High School in connection with a study they were making at that time. The results of this study have not been published.

The present writer decided to use the results from the inventories from the Clarke-Taschuk study to begin a longitudinal study. It was decided to give the inventories again when the same students were in grade eleven and a third time when they were in grade twelve. A longitudinal study seemed to be a useful method of self-concept investigation at that time. The appropriateness of the longitudinal approach has been confirmed by writers such as Wylie (1961) who stated:

> At present there are no longitudinal data on which to base a description of the development of the self-concept. In lieu of such data, one might think that results from cross-sectional studies of various age groups could be pieced together to attain a tentative developmental picture. This is impossible, however, due to the wide differences in instruments, relevant characteristics of students and testing conditions in the studies under review [p. 119].

An investigation into the stability of the self-concept seemed to be a fruitful field because the two studies carried out which attempted to test the stability of the self-concept in adolescents seemed to have conflicting conclusions. Engel (1959, p. 215) concluded that the self-concept in adolescents was stable, but Tyler (1959, p. 225) concluded that there does not seem to be a high degree of stability in the self-concept of adolescents. Since additional information related to the students was available, it was decided to see if the self-concept stability was related to such things as intelligence, social status, and maturation age.

Another kind of study related to the longitudinal investigation was also decided. A high school class has many drop-outs, and a comparison of the self-concept and other factors such as intelligence and social status of the drop-outs to the continuands when all were in grade ten seemed valuable.

Since knowledge of self-stability is important to self-theory, a study as briefly outlined above seemed valuable. The four chief parts of the study to emerge are given below:

1. To investigate the stability of the self-concept of adolescents over one and two-year intervals.

2. To investigate the stability of the self-concept and its relationship to such factors as social status, intelligence, and maturation age.

3. To investigate the favorability of self-concept and to see if such things as social status, intelligence, and maturation age make for differences in favorability.

4. To investigate the differences between drop-outs and continuands when all were in grade ten for such factors as self-concept, intelligence, social status, and maturation age.

Chapter 3

BACKGROUND

RELEVANT GENERAL LITERATURE

The Self: A History

This present study is the sixth study on the self to be carried out in Alberta. The first study was A Study of the Self-Concept and the Ideal-Concept in Adolescence by McGregor (1955). The second was An Analysis of the Self-Concept of Grade Nine Students by Taschuk (1957a). The third was The Self in Interpersonal Theory: The Relationship Between Attitudes Referring to Self and Significant Others by Brown (1957). The fourth was The Many Voices: A Preliminary Investigation into the Consistency of the Self-Concept by Anderson (1959). The fifth was In-Group Orientation and Self-Conceptions of Indian and Other Students by Abu-Laban (1965).

The idea of the self-concept is not new. Wylie (1961, p. 1) mentioned that William James made it an important topic in his Principles of Psychology (1890). James (1890) defined self rather broadly: ". . . in its widest possible sense, however, a man's Self is the sum total of all that he can call his . . . [p. 291]." He mentioned self-feelings (1890),

"these are primarily self-complacency and self-dissatisfaction [p. 305]." These feelings govern much of our behavior. Self-preservation was also mentioned by James: "All the ordinary useful reflex actions and movements of alimentation and defense are acts of . . . self-preservation . . . [p. 307]."

The next important body of writings according to Wylie (1961) were the introspectionists such as Calkins. Wylie stated that "The introspectionists were unable to handle the self [p. 1]." During the 1920's, Wylie showed that the self all but disappeared:

> Constructs concerning the self did not receive much attention from the behaviorist and functionalist psychologies which were dominating the American scene.

One writer who continued to develop ideas on the ego during this period was Freud. (The ego is a kind of self but differs from the self as used in this study. This difference will be discussed later.) From 1911 to 1927 he published at least five significant books that discussed the development of the function of the ego, according to Symonds (1951, p. 203).

During the late 1920's, a number of psychologists recognized some of the inadequacies of the empirical behaviorists and started to think of the whole individual. Lecky (1961) showed that this led to thinking about the self. These people turned to Adler, the great German psychologist. By the late 1920's, he was dissatisfied with his theory of inferiority compensation and he developed his idea of the creative self,

according to Hall and Lindzey (1957, p. 124). An American thinker influenced by Adler was Lecky (1961), who in 1938 was working on his theory of self-consistency. Lecky tried to show:

> . . . that no system of psychology could be considered to be complete which did not effectively deal with conscious experience, personality dynamics, purposive behavior, creative thought, and with integration as a basic attribute [p. 9].

Another group which thought about the self during the late 1920's and early 1930's were the Gestalt psychologists. Kohler (1929) stated:

> . . . we laid some stress on the point that our "self" occurs as an experienced whole in the same field which contains our experiences of surrounding objects and events [pp. 312-320].

Hall and Lindzey (1957) stated that in 1935 Koffka had something to say about the neglect of the self:

> Many modern psychological text books . . . give you to understand that psychology has nothing to do with the Ego or the Self. . . . Too much philosophical speculation had clustered round the self-concept to make it acceptable to scientific-minded psychologists [p. 475].

To Koffka the <u>self</u> is the core or nucleus of the ego.

The next writer of note to use the self as a central theme was Mead (1934), who wrote:

> . . . the language process is essential for the development of the self. The self has a character which is different from that of the physiological organism proper; it is not initially there at birth, but arises in the process of social experience and activity, that is, develops in the given individual as a result of his relations to that process [p. 135].

From the mid-1930's until the present, the Freudian oriented psychologists have published a good deal of material on the ego or the

self. Horney (1939, p. 183) attempted to list the factors which the ego entails. Later, according to Hall and Lindzey (1957, p. 134), she attempted to show the unfortunate consequences of an unrealistic conception of the self. Anna Freud, according to Symonds (1951), brought out in 1937:

> . . . one of the most important contributions in the literature of the ego . . . the concept that the individual is responsible for his method of defense against anxiety [pp. 202-203].

She published an excellent survey of the steps in ego development in 1945 (Symonds, 1951, pp. 202-203). Anna Freud (1946) stressed the importance of the study of the ego. "It is . . . the medium through which we try to get a picture of the other two institutions [p. 6]," the id and superego.

Klein (1948, p. 82) gave the ego the outside executive role. Fromm, according to Hall and Lindzey (1957) has shown that an ideal society is one that gives man:

> . . . the possibility of transcending nature by creating rather than destroying, in which everyone gains a sense of self by experiencing himself as the subject of his powers rather than by conformity [p. 130].

Jung, in 1953, made the self the midpoint of personality around which all of the other systems are constellated. It holds these systems together and provides the personality with unity, equilibrium, and stability (Hall and Lindzey, 1957, p. 85). One of the latest psychoanalytically based books deals with self-concept evaluation when negative information is received so that both self-evaluation and self-esteem

can be satisfied (Pepitone, 1964, p. 183). Another by Jacobson (1964, p. 159) spoke of the confusing emotional development in adolescence.

A branch of psychology which has contributed a good deal to self-psychology is organismic psychology, which can be regarded as a branch of Gestalt psychology (Hall & Lindzey, 1957, p. 297). An organismic theory of personality is defined by the attitude of the theorist, not by the contents of the model of personality that is constructed. If the theory focuses upon the whole organism as a unified system rather than upon separate traits or drives or habits, then the theory may be called an organismic one (Hall & Lindzey, 1957, p. 330).

According to Goldstein, a leading exponent of organismic theory, the major motive of the individual is self-actualization. The replenishment or fulfillment of a need is self-actualization. This theory stresses conscious motivation (Hall & Lindzey, 1957, pp. 304-305). The importance of the idea of self-actualization was extended by Maslow (1943, p. 395) when he listed it as a basic need. According to Hall and Lindzey (1957, p. 327), Maslow took an optimistic view of psychology. He studied successful people in history and those he knew. From these self-actualizing people, he made a list of fifteen things that distinguished them.

Murphy, another organismic theorist, uses the self as a structural feature of his system. It is defined very simply as the person's perceptions and conceptions of his whole being or "the individual as known to the individual" (Hall & Lindzey, 1957, p. 508).

Angyal, another organismic theorist, has used the idea of the symbolic self. He observes:

> . . . that man is capable of developing ideas about himself as an organism because many of his organic processes become conscious. The sum total of these self-conceptions constitutes his symbolic self [Hall & Lindzey, 1957, p. 319].

This symbolic self is a method of representing the organism but is not always reliable because what a person thinks about himself is not always a true picture of reality.

Some other theorists who have contributed to self theory are mentioned. Sullivan, the great psychiatrist and social psychologist, was one important contributor. His self-system develops from interpersonal relations (Hall & Lindzey, 1957). "Since the self guards the person from anxiety, it is held in high esteem and is protected from criticism [p. 139]." The self-system is "the principal stumbling block to favorable changes in personality [p. 139]."

Allport, who paved the way for self psychology (1943), could be classed with the organismic psychologists because of his concern with the whole organism. Even though he championed the ego in his address, he does not see the self or the ego as entities separate from the total personality (Hall & Lindzey, 1957, pp. 268-269). Cattell uses the self in his factor theories as the concept to give them stability and organization. His views on the self draw upon the psychoanalytical ego (Hall & Lindzey, 1957, pp. 403-404). In the personology of Murray, it is shown that the

ego acts as an inhibitor of the id as well as arranging, scheduling, and controlling the manner in which other motives are to appear. It is viewed, as in psychoanalysis, as the central organizer and integrator of behavior (Hall & Lindzey, 1957, p. 169).

The organismic theorists, with their stress on the whole individual, laid the theoretical foundations for the next group of theorists, the phenomenologists. Wylie (1961) stated that the phenomenological theorists put "stress on the role of the conscious self-concept in determining a person's behavior [p. 3]." Lecky (1961), the first of the phenomenologists, developed his ideas of self-consistency during the 1930's. In his first book Lecky (1945) stated that the self was consistent and strove to maintain its unity and integrity.

> We conceive of the mind or personality as an organization of ideas which are felt to be consistent with one another. Behavior expresses the effort to maintain the integrity and unity of the organization. . . . In order to be assimilated, the idea formed or a result of a new experience must be felt to be consistent with the ideas of self. Inconsistenty is recognized as the personality develops and must be expelled from the system. There is thus a constant assimilation of new ideas and the expulsion of old ideas throughout life [p. 150].

A second important work mentioned in Snygg and Combs (1949, p. 79) and Symonds (1951, p. 214), was by Raimy. He gave three basic principles with respect to the self-concept according to Symonds (1951).

1. The self-concept is a learned perceptual system which functions as an object in the perceptual field.

2. The self-concept not only influences behavior but is altered and reconstructed by behavior and unsatisfied needs.

3. It may have little or no relation to external reality [p. 214].

A third phenomenological work was published by Snygg and Combs in 1949 and again in revised form in 1959. The phenomenal self, as defined (Snygg & Combs, 1949) is "all those parts of the phenomenal field which the individual experiences as part or characteristic of himself [p. 58]." The phenomenal field has been defined as "the universe, including himself, as it appears to the individual at that moment [p. 57]."

The object of a person's existence, according to Snygg and Combs (1949), is "the maintenance and enhancement of this self" and "for the most of us the phenomenal self is an extremely stable organization [p. 79]." In 1959 the ideas of Combs and Snygg (1959) were carried a little farther:

> The phenomenal self is the individual's basic frame of reference . . . whether the other persons would agree with his self-definitions or not; the phenomenal self has the feeling of complete reality to the individual. It is himself from his point of view [p. 145].

The tremendous influence of self-psychology is felt in many fields. This has been summarized by Hamachek (1965):

> Today one cannot pick up a textbook in psychology, educational psychology, mental hygiene, counseling, or child development which does not deal, at least in part with the idea of the self and the implications of this construct for understanding and predicting human behavior [p. v].

One of the earliest fields to feel the importance of the self-concept (other than psychotherapy and counseling) was vocational guidance through the writings of Super (1957). He showed that a career is

the implementing of a self-concept and stated implications for education in self-concept formation:

> . . . a well formulated self-concept, which takes into account the realities of the working world, makes for an easier transition from school to work, than does a hazy or unrealistic concept of self. Here there is a major goal for education: the development of clear well-formulated, and realistic self-concepts [p. 111].

The ideas formulated in 1957 were extended by Super and others in 1963 (Super, et al, 1963):

> In expressing a vocational preference a person puts into occupational terminology his idea of the kind of person he is . . . that in getting established in an occupation he achieves self-actualization [p. 1].

The ideas of self-psychology have also been used in trying to understand racial problems. Abu-Laban (1965) in a study of Indian integration in Canadian schools, stated:

> Although some people assume that school integration eliminates the self-awareness of minority group members and consequently minority status, it may be argued that such a result is doubtful if integration is accompanied by feedback which differentiates or is perceived to differentiate between majority and minority groups [p. 193].

Two speakers at the Lincoln Filene Center conference at Tufts University on Negro Self Concept in the United States gave some educational implications. In speaking of the negative self-concept of Negroes which may be modified by the schools, the chairman stated in the introduction:

> We assume . . . that the self is heavily affected by the "reflected appraisals" of the society in which the person lives. . . . The

> child toward whom the predominant attitude of significant persons has been one of hostility, disapproval, and dissatisfaction will tend to view the world in similar terms [pp. 2-3].

Kvaraceus (1965) showed that the school is limited in the help that it can give:

> . . . there is no one thing that the school, acting by itself, can do that will make any great difference in the self-concept of Negro youth . . . yet he must learn to face his reality . . . to survive . . . [p. 126].

The Self-Concept of Carl Rogers

Before outlining the self-theory of Rogers, it perhaps would be best to differentiate between the ego and the self, as they are usually used in psychological writings, because the ego and the self as used by most writers are not the same. Hall and Lindzey (1957, p. 468) have pointed out that there is often confusion between the two. The distinction made by Symonds (1951, p. 4) is the one that is perhaps most common. To him, "the ego is an active process for developing and executing a plan of action for attaining satisfaction in response to inner drives [p. 4]." The self, as he expressed it, "refers to the body and mind and to bodily and mental processes as they are observed and reacted to by the individual [p. 4]." Symonds (1951) went on to show this difference.

> The ego refers to the self as object--the self which perceives, thinks, and acts--and which would be described by an outside observer. . . . The self, on the other hand, is the subjective self as it is perceived, conceived, valued, and responded to by the individual himself. The self . . . corresponds to the "phenomenal self" . . . in the current phenomenological approach . . . [p. vi].

This would agree with Wylie (1961) who stated that,

> Two chief meanings emerge . . . the self as subject or agent and the self as the individual who is known to himself . . . . The words "self-concept" have come into common use to refer to the second meaning [p. 1].

Taschuk (1957b) stated in his thesis that "Rogers' theory . . . even now . . . appears to be the most complete theory of personality based on the self-structure [p. 17]." Hall and Lindzey (1957) also stated that:

> . . . we have selected Rogers' formulation because it is the most fully developed statement of self-theory. Moreover, Rogers has buttressed his speculations with an imposing array of empirical supports [p. 469].

Since this study deals with the self-concept, the theory of Rogers was studied and some of its essentials are given in the following paragraphs.

The first significant work of Rogers, published in 1939, was entitled The Clinical Treatment of the Problem Child. He was interested in describing and discussing a variety of treatment skills. He did not have a theory of personality as yet, but some ideas which he used later can be seen developing. In speaking of older children, Rogers (1939) said:

> . . . the attitudes which he holds towards himself and his behavior are decidedly significant and worthy of evaluation . . . these attitudes . . . operate as an important influence to shape his future behavior [pp. 48-49].

We can see here that Rogers considered a person's conscious attitudes as important in directing behavior, even though he had not yet developed a personality theory based on these ideas.

Rogers (1943) published a book designed to help counsellors in which he stated the methods he found to be successful. He stressed the need for the counsellor to encourage free expression of feelings and the need for the counsellor to respond to these feelings so that they are accepted and recognized. According to Rogers, the client gains insight into his problems.

> This insight, this understanding of the self and acceptance of the self, is the next important aspect of the whole process. It provides the basis on which the individual can go ahead to new levels of integration [p. 40].

Here again the important thing was that a person becomes conscious of himself. The self was central to the individual.

This same theme of providing a safe atmosphere where the client can gain insight into himself and learn to accept himself has been expressed in Rogers' and Wallen's book Counselling With Returned Servicemen (1946).

> It is the counsellor's function to provide an atmosphere in which the client, through his exploration of his situation, comes to see himself and his reactions more clearly and to accept his attitudes more fully [pp. 5-6].

In 1951, Rogers brought out his theory of personality and behavior. In forming this theory, he called upon his long experience as a counsellor and the writings of many psychological theorists. Hall and Lindzey (1957, p. 478) and Rogers (1951, p. 481) mention Goldstein, Angyal, Maslow, Mowrer, Lecky, Sullivan, Murphy, Murray, Snygg and Combs, Raimy, and others. These writers have already been mentioned in this study. The

theory of Carl Rogers was carefully outlined in Hall and Lindzey (1957, pp. 481-533). Some of the important points are given below.

> The principal conceptual ingredients of Rogers' theory are these: (1) the organism which is the total individual, (2) the phenomenal field which is the totality of experience, and (3) the self which is a differentiated portion of the phenomenal field and consists of a pattern of conscious perceptions and values of the "I" or "me." The organism possesses the following properties: (a) it reacts as an organized whole to the phenomenal field in order to satisfy its needs, (b) it has one basic motive, namely, to actualize, maintain, and enhance itself, and (c) it may symbolize its experiences so that they become conscious, or it may deny them symbolization so that they remain unconscious, or it may ignore its experiences. The phenomenal field has the property of being conscious or unconscious, depending upon whether the experiences that constitute the field are symbolized or not.
>
> The self, which is the nuclear concept in Rogers' theory of personality, has numerous properties, some of which are these: (a) it develops out of the organism's interaction with the environment, (b) it may introject the values of other people and perceive them in a distorted fashion, (c) the self strives for consistency, (d) the organism behaves in ways that are consistent with the self, (e) experiences that are not consistent with the self-structure are perceived as threats, and (f) the self may change as a result of maturation and learning [p. 478].

In 1954, Rogers and Dymond brought out a book entitled Psychotherapy and Personality Change. This book showed that adjustment came with a reorganization of the self so that a much larger portion of experience is brought into awareness:

> Change in the perception of self, or concept of self, appears to be basic to personality change. . . . It is this concept of self which is reorganized during the therapy period [p. 345].

The latest and most complete statement of the theoretical writings of Rogers was found in Psychology: A Study of A Science by Koch (1959,

pp. 184-256). Here, Rogers expressed his theories of therapy, personality, and interpersonal relationships. The thinking presented in 1951 is extended and clarified. The self was still the central part of his theory. He showed that the self develops from experience and awareness (p. 223), that the individual possessed the capacity to reorganize his self-concept to make it more congruent with his experience (p. 221), and that a fully functioning person has the capacity and tendency to keep his self-concept congruent with his experience (p. 234). He attempted, in this article, to show how his theory can be extended to human relationships outside the counselling relationship.

In 1961, Carl Rogers published two pieces of writing. The first was a chapter in a book on psychotherapy (1961b). Here, he briefly out- his latest ideas on client-centered therapy. Again the need for communication and a receptive climate in order for the self-concept to change in therapy is expressed (1961b, p. 121). The second publication was a book which summarized his thinking on psychotherapy at the end of thirty-three years of counselling (1961a). Again he pointed out that a change must be made in the concept of self if help is to be given in client-centered therapy (1961a, p. 258).

Further Readings Related to the Study

Symonds (1951, p. 42) pointed out that self-consistency is the cornerstone of Rogers' theory of psychotherapy. All the writers who have

used the self as a central construct in personality have stated that the self was consistent. Lecky (1945) has stated that:

> We conceive of the mind or personality as an organization of ideas which are felt to be consistent with one another. . . . The point is that all of an individual's ideas are organized into a single system, whose preservation is essential [p. 150].

Jersild (1952) stated that:

> A person's behavior expresses an effort to maintain the integrity, unity, and inner consistency of the personality system which has as its nucleus the individual's evaluation of himself [p. 19].

In presenting Rogers' theory, Hall and Lindzey (1957) gave the self the property that it "strives for consistency [p. 478]." Rogers (1951) stated that:

> As a result of interaction with the environment, and particularly as a result of educational interaction with others, the structure of the self is formed--an organized, fluid, but consistent conceptual pattern of perceptions of characteristics of the "I" or "me," together with values attached to these concepts [p. 498].

Jersild (1952) pointed out a theoretical paradox in relation to the self. "Thus, while the self is a continuously growing and changing phenomenon, it is also, paradoxically, strongly geared to prevent growth and change [p. 19]." Hall and Lindzey (1957), in referring to Rogers' theory, pointed out that the self is consistent, but "the self may change as a result of maturation and learning [p. 478]." We also saw that Rogers (1951, p. 498) said that the self was "fluid" but still organized and consistent. This would mean that the self could experience change but only as an organized whole. Rogers (1959, p. 220) has shown that adjustment

can be determined by the ease with which the self-concept can assimilate new data and in so doing, change itself. Rogers (1951) also stated:

> Any experience which is inconsistent with the organization or structure of self may be perceived as a threat, and the more of these perceptions there are, the more rigidly the self-structure is organized to maintain itself [p. 515].

This gives a picture of the maladjusted self-concept. The formation of an adjusted self-concept was also given (Rogers, 1951):

> Under certain conditions, involving primarily complete absence of any threat to the self-structure, experiences which are inconsistent with it may be perceived, and examined, and the structure of self revised to assimilate and include experiences [p. 515].

These writings would seem to indicate that a change in self-concept would be expected over a period of time. The longer the period of time, the greater the change would probably be.

Gordon (1962, pp. 3-22), in the first chapter of Human Development, tries to give a summary of the self-concept theory. A number of times self-consistency and self-stability are mentioned as central themes. Some of his statements showing this are given. "The child . . . attempts to organize himself and the environment into some meaningful constancy [p. 9]." "The organization of the developing person at any single moment in time is his self-system . . . . This self-system attempts to maintain a steady state. . . . [p. 18]." Gordon does, however, show that change can occur with time and experience:

> The child, as he develops, is breaking up his environment and experiences and then reassembling and reorganizing those pieces

> into a new whole which he perceives as his self and his world. . . . This developing process . . . is an orderly one [p. 12].

The idea that individuals with stable self-concepts are well adjusted is supported by the experimental evidence of Brownfain (1952, p. 605).

A number of writers have tried to point out the effect of self-concept on behavior. Rogers (1951) has stated:

> Most of the ways of behaving which are adopted by the organism are those which are consistent with the concept of self. . . . The man who has certain values attached to honesty cannot strive for a sense of achievement through means which seem to him dishonest. The person who regards himself as having no aggressive feelings cannot satisfy a need for aggression in any direct fashion [p. 507].

Lecky (1945) has given an implication for education:

> If the pupil shows resistance toward a certain type of material, this means that from his point of view it would be inconsistent for him to learn it. If we are able to change the self-conception which underlies this viewpoint, however, his attitude toward the material will change accordingly [p. 120].

He gives two examples from his experience which rather strikingly show that school success comes with a change in self-concept.

> A high school student who misspelled fifty-five words out of a hundred and who failed so many subjects that he lost credit for a full year became one of the best spellers in the school during the next year and made a general average of 91 . . . . A girl who failed four times in Latin, with marks between twenty and fifty, after three talks with the school counsellor, made a mark of 92 on the next test and finished with a grade of 84 [pp. 120-121].

Staines (1958, pp. 97-111) was also interested in the effect of the self-concept on the educative process. He taught a class in such a way that their self-concept was changed and concluded: ". . . the self

can be deliberately changed by suitable teaching method." The students in this experimental class did a little better work than those in the control class. These writings imply that by obtaining information on the self and applying this information to students in school, better results could be obtained.

Super, et al (1963) stated a relationship between self-stability and the ability to make decisions:

> It seems likely that a person who consistently sees himself in a certain light has a more adequate basis for decision making than does one whose picture of himself changes . . . [p. 27].

The rapidly changing person during the adolescent period has given rise to much speculation as to what occurs in the self-structure. Gordon (1962) sees this period as a time when ". . . self definition is a vital task for this age group, and that both cultural and biological factors combine to make this so [p. 311]." Ericson's article in Hamachek's book (1965) sees adolescence as:

> The psychological revolution that comes with puberty where the developmental task is to integrate childhood identifications "with the basic biological drives, native endowment, and the opportunities offered in social roles [p. 327]."

Jacobson (1964) spoke of the "confusing emotional manifestations [p. 159]" of adolescents. Fleege (1945) stated that ". . . the unfolding of the 'self' brings 'increased sensitiveness,' 'fear of failure,' and'heightened self-respect.'" He also mentions "the mercurial character of the adolescent" who "one day may be riding the crest of the

wave of joy and the next be in the trough of gloom [p. 181]." Strang (1964-65) stated:

> Achieving identity is a major developmental task of adolescence. The adolescent modifies, enhances, and extends the self-concept that he began in childhood. . . . The self image tends to maintain its identity from day to day. It has continuity [p. 106].

Even through this difficult period the idea of a relatively stable self-concept still holds according to Strang, but there may be changes due to a maturation process.

Research supports the already stated idea that self-concept is related to achievement. Walsh (1956) found that:

> . . . the low achievers consistently differed from the adequate achievers . . . as restricted in action; unable to express feelings appropriately; . . . and acting defensively through compliance, evasion, or negativeness [p. 52].

The Michigan State University study (1962) found that "Self-concept of ability is positively related to school achievement when measured intelligence is controlled [p. 72]" for both adolescent boys and girls. Fink (1962) reported that ". . . an adequate self-concept is related to high academic achievement and an inadequate self-concept is related to low academic achievement [p. 61]." Studies by Borislow (1962, p. 253) and Brookover, et al (1964, p. 276) gave additional evidence to support the relationship that self-concept and achievement are related. If self-concept and achievement are as closely related as it seems the educational implications are great. Remedial programs

must include adequate counseling services if self-concepts are to be improved and the programs be successful.

Research Pertinent to the Study

The need for research on the development of the self in human development has been pointed out by numerous writers. Wattenburg (1955) stated: ". . . careful work on concepts of self is difficult. . . . In a field which is in its infancy, the amount of work that deals specifically with the teen years is slight [pp. 325-326]." Staines (1958) wrote regarding the self-concept and the need for studying it:

> We need . . . further research into the process by which concepts are developed. We need to know more about the role of emotions in concept development. We need to know more about the way in which a child integrates his experience . . . . The importance of the self-concept is perhaps primary. All other concepts are probably related to self-concept, which is the core of the whole conceptual scheme of the person [pp. 97-111].

In a recent book, Jacobson (1964), a psychoanalytically oriented writer, stated: ". . . our insights into the confusing emotional manifestations and symptomatology of this developmental period is as yet far from complete [p. 159]." Engel (1959) showed the value of the longitudinal method of examining the self-concept:

> . . . the fate of the self-concept in adolescence is still a matter for speculation. . . . However, it is the longitudinal approach that is most appropriate when seeking answers to questions of development [p. 211].

Gordon (1962), after writing about the stability of the self-concept, ended with this statement: "We might end with those famous

last words: further research is needed [p. 332]." The present study will attempt to supply some of this lacking information related to the self-concept of adolescents.

Most of the self-theorists have assumed that the self-concept has consistency. Symonds (1951) has called self-consistency "the cornerstone" of self-theory. Anderson (1959), at the University of Alberta, questioned this assumption of self-consistency. This was the only study found which dealt with self-consistency in adolescents. After giving a self-inventory to 105 grade eight pupils four times with intervals of one week between testings, he concluded that there was considerable inconsistency in the functions being measured by the test. The study showed that according to his measure, the self-concept was inconsistent, but this may have been a function of the instrument used. The reliability of the instrument was not given, but it is likely that an instrument as brief as the one used would have limited reliability. The conclusion that the self-concept was inconsistent may be questioned since the results if obtained from an unreliable instrument would appear as inconsistency in the factors being measured, in this case, the self-concept.

Two studies were found which dealt with the stability of the self-concept of adolescents over a period of time. The first by Engel (1959) supported the idea of self-stability. A Q-sort test was given to 172 boys and girls when they were in grade ten and again when they were in grade twelve. She obtained a correlation of .53 over the two years. The instrument

gave a test-retest reliability of .68 over a ten-day interval. This would indicate a certain amount of stability in the self-concept. Those with positive self-concept scores on the first testing showed an increase on the second testing, but those with negative self-concept scores on the first testing were significantly less stable on the second testing. Brownfain's (1952, p. 605) study gives additional evidence to support the idea that adjustment is related to stability of self-concept but his sample was drawn from a college population.

The second study of self-stability was carried out by Tyler (1957) in California as an outgrowth of the California Growth Study. An inventory was given to thirty subjects when they were eleven, thirteen, and seventeen. The matched halves reliability coefficients of the eight parts of the inventory ranged from .92 to .40. Tyler concluded:

> The presence of the non-significant W's in some subjects did not seem to arise simply from the unreliability of the measuring instruments. . . . It is believed that the nature of the results reported is not favorable to the hypothesis of a high degree of stability in the adolescent's reported self-concept [p. 225].

The conclusion must be questioned since the intervals of time between testings were quite large. As the subjects were rapidly maturing during these years, the self-concept change may have been a result of maturation rather than instability. A self-concept change related to maturation was found by Nichols (1963) who reported that high school seniors "achieved significantly higher scores on the California Mental Health Analysis than freshmen [p. 407]."

No research could be found linking the stability of the self-concept of adolescents with intelligence, social status, or age of maturation. In fact, research dealing with the self-concept in adolescents is rather scarce. The few studies found relating the self-concept of adolescents with intelligence, social status, maturation age, and sex differences are mentioned in the following paragraphs.

Four studies were found which dealt with the relationship of intelligence and favorability of self-concept. Taschuk (1957b, p. 66) found that only the mental area of his self-concept inventory significantly correlated with intelligence, while the other areas (physical, social, and personal) did not. The Michigan State University Study (1962, pp. 72-75) which found that there was a significant correlation between concept of ability and measured intelligence, supports Taschuk's findings for mental self-concept. Nichols (1963, p. 40) found that intelligence was positively related to gains made over a three-year period on the California Mental Health Analysis, which would indicate some relationship between intelligence and favorability of self-concept. Strang (1964-65) stated why a relationship should exist between self-concept and intelligence.

> The gifted adolescent is unusually perceptive and analytical: he is more likely to have an accurate picture of his true self than is the less able teenager [p. 106].

Three studies relating social class and favorability of self-concept were found. The study by Klausner (1953) showed relationship

between self-concept and social class. He gave a Q-sort test to twenty-seven adolescent boys to test the hypothesis:

> . . . that if the self-concept is developed, in part, through social interaction, that individuals who have different experiences in interacting socially should have differing self-concepts [p. 201].

He concluded by saying,

> It seems that we do have . . . different self-concepts between members of different socio-economic groupings and the members of the same socio-economic grouping tend to have a more homogeneous self-concept [p. 205].

The Michigan State University Study (1962, pp. 72-75) stated that socio-economic status was directly related to the self-concept of ability. Havighurst, et al (1946) found that "people from families of lower socioeconomic status lag behind those of middle socioeconomic status [p. 255]" in the development of self-concept.

Mussen and Jones (1957) concluded their study of self-concept and maturation age with the following statement:

> Analysis of the data of the present study indicates that this situation may have adverse effects on the personalities of the physically retarded. These boys are more likely to have negative self-conceptions . . . . In contrast, the early maturing boys present a much more favorable psychological picture during adolescence. Relatively few of them felt inadequate, rejected, dominated, or rebellious toward their families. More of them appeared to be self-confident, independent, and capable of playing an adult role in interpersonal relationships . . . . These findings make it clear that rate of physical maturity may affect personality development in crucially important ways [p. 255].

Gordon (1962), in commenting on this study, drew four conclusions.

> First the rate of maturity does affect the self-concept of the adolescent.
>
> Second, it seems that early maturers, regardless of sex, have . . . conceptions of self as more adequate, more accepted, more integrated, than their late maturing peers.
>
> Third, these relationships are by no means simple. Of vital importance is the already developed self-concept held by the boy or girl when he reaches adolescence.
>
> Fourth, . . . the affects seem to be long-range, lasting into at least young adulthood [pp. 283-284].

The study of Jones and Mussen (1958) concluded with this statement: ". . . late maturing adolescents of both sexes are characterized by less adequate self-concepts . . . [p. 500]." The findings for girls were similar to the findings for boys. Jones (1957) showed that these differences were lasting: "The adolescent handicaps and advantages associated with late or early-maturing appear to carry over into adulthood . . . [p. 127]."

The study relating sex differences with self-concept is found in Taschuk's (1957a, p. 97) journal article. He found that girls had significantly better self-scores than boys for the social self-concept, physical self-concept, and total self-concept. There was no difference in scores for the mental self-concept or personal self-concept. Since Martin and Hornberger (1957) found that "the sexes have similar concepts of self [p. 291]" in a college population, the differences Taschuk found may be the result of earlier maturation of the girls. The difference due to maturation may be the cause of these differences since the <u>pattern</u> of self-concept development is the same for boys and girls according to the Jones

and Mussen (1958) study. The higher mean self-concept of ability for seventh grade girls as found in the Michigan State University Study (1962, p. 72) may be due to maturation or some other factors. No clear cut pattern of self-concept differences for boys or girls appear to be evident from the studies found.

Studies Related to Drop-Outs

The concern attached to students dropping out of high school has given rise to numerous studies in the last few years. Four studies made at the University of Alberta were studied. Hohol (1954, p. 131); Black, MacArthur, and Patterson (1961, p. 17); Larson (1958, pp. 213-214), and Rancier (1963, p. 20) gave different characteristics of students who drop out of school. Some of these characteristics were: low intelligence, low achievement, occupational and educational levels of parents, economic difficulties, overageness, and personality problems.

Personality adjustment has been stressed by other writers on the subject of drop-outs also. Gordon (1962, p. 380) stated that there was a relationship between favorableness of self-concept and achievement with those of high achievement having a positive self-concept. A Toronto study at the St. Christopher's House (p. 9) stated that drop-outs frankly admitted their inability to cooperate with school authorities in such matters as attendance, discipline, and teacher-student relationships. Licher, et al 1962, pp. 94-95) found that drop-outs had severe personality problems

that interfered with academic achievement, and more often than not, with social functioning in the home, the classroom, and the community. Havighurst, et al, from the Committee on Human Development at the University of Chicago (1962) showed factors related to school success.

> It is clear that progress through school is related to social status, ability, personal and social adjustment, and personal motivation for education. These factors are all interrelated . . . [p. 57].

In speaking of school progress, the same publication stated:

> The best equipment for satisfactory growth is to have a keen mind, to accept oneself and to be well accepted by others, and to come from a middle class family [p. 35].

THEORY

The Stability of the Self-Concept

Self-stability and self-consistency are basic to self-theory. Symonds (1951, p. 42), Lecky (1945, p. 150), Jersild (1952, p. 19), Rogers, 1951, p. 498), and other writers of self-theory have emphasized the stability and consistency of the self in their theoretical writings. The stability of the self-concept is not a rigid quality according to the self-theorists, but changes with time and maturation. Rogers (1951) called it "an organized, fluid, but consistent conceptual pattern of perceptions [p. 150]" and Jersild (1952) said that it was a "continuously growing and changing phenomenon [p. 151]."

Research into the stability of the self-concept has given conflicting evidence. Engel (1959) gave evidence supporting the stability

of the self-concept for adolescents over a two-year period. Tyler (1957) concluded from his study that his evidence was not favorable to the idea of a high degree of stability in the self-concepts of adolescents. Tyler's conclusion that the self-concept does not seem to have stability may be the result of the maturation and learning of the group studied rather than instability because the time intervals between testings were quite large.

The evidence from studies dealing with self-consistency also gives positive and negative results. Anderson's (1959) study, the only piece of research which investigates self-consistency of adolescents found, showed that the self-concept was not consistent. Evidence to support the idea of self-consistency comes indirectly from two studies. Tyler (1959, p. 225) and Taschuk (1957b, p. 54) both obtained high reliability coefficients for their self-measuring instruments over short periods of time indicating some degree of self-consistency. (Taschuk had a reliability coefficient of .91 and Tyler had reliability coefficients from .67 to .76 for eight subtests. All were significant at the .01 level.) The negative evidence of Anderson could be, as pointed out earlier, the result of an instrument of low reliability.

The first general statement regarding the stability of the self-concept is that: the self-concept is stable but it may change with time; the change, depending on maturation and learning, will be directly related to the length of the time interval.

Factors Affecting Self-Stability

The self-concept appears to be basically stable, but this stability also seems to be associated with change. Engel (1959) gave evidence which suggests that people with favorable self-concepts experience less change and have more stability than those with unfavorable self-concepts. This idea of the stability of the self-concept and favorability of the self-concept is supported by the evidence gathered by Brownfain (1952). It would seem that those factors which give an individual an unfavorable concept of himself would probably be the factors associated with self-concept instability and greater change. It would also seem that those factors which would make for a favorable self-concept would be associated with greater stability of the self-concept and less change.

Rogers (1951, p. 498) has pointed out that the most important factor in the shaping of the self-concept is "evaluational" interaction with others. A favorable self-concept would be formed in a person who received positive statements from his siblings, his peers, his parents, and his teachers. Positive statements would probably be received by those: who are able to succeed at school and elsewhere because of a high intelligence; who come from middle or upper class homes and do well at school as well as conform to middle class norms of society; who are bigger and more physically mature and as a result can succeed in sports, do heavy physical activities, and fit into late adolescent society

earlier. Negative statements would be received by those: who are less intelligent and succeed less well at school and society; who come from lower class homes and place less emphasis on education and middle class values; who are small and late maturing.

Research relating intelligence, social status, and maturation age to self-concept shows that some relationships appear to exist. Taschuk (1957b, p. 66), The Michigan State University Study (1962, pp. 72-75), Nichols (1963, p. 40), and Strang (1964-65, p. 106) conducted studies relating self-concept to intelligence. The data tend to show a positive relationship between intelligence and self-concept. Studies by Klausner (1953, p. 205), The Michigan State University (1962, pp. 72-75), and Havighurst, et al (1946, p. 255) showed that self-concept and social status are positively related. The positive relationship between maturation age and self-concept is supported by evidence gathered by Mussen and Jones (1957, p. 255) and Jones and Mussen (1958, p. 500).

The second general statement regarding the stability of the self-concept is that: the stability of the self-concept in adolescence is related to a favorable concept of self, favorable intelligence, middle or upper socio-economic status and early maturation; instability in the self-concept will result from an unfavorable concept of self, low intelligence, a lower class home, and late maturation.

Factors Affecting the Favorability of Self-Concept

The preceding section (Factors Affecting Self-Stability) listed evidence that showed three factors associated with a favorable self-concept: intelligence, social status, and maturation age. A factor giving conflicting evidence on self-concept favorability is differences in sex. Taschuk (1957a, p. 97) found a difference in self-concepts between adolescent boys and girls, but Martin and Hornberger (1957, p. 291) found no differences in a college population. Since the present study's subjects are closer to Taschuk's study in age, a sex difference in favor of girls will be used.

A third general statement is that: favorability of self-concept will be related to intelligence, social status, early age of maturation, and sex (in favor of girls); unfavorability will be related to low intelligence, low social status homes, late age of maturation, and sex (boys).

Factors Associated with Drop-Outs

Research by Hohol (1954), Larson (1958), Rancier (1963), and others to find out the reasons why students drop out of school has produced evidence to show that those who drop out of school have lower intelligence, come from lower class homes, and have poorer personal adjustment than those who continue. No research could be found relating maturation age to school drop-outs, but if late maturing is an important cause of personality maladjustment, it would be expected that those who

mature late would probably have a difficult time fitting into adult society so he may choose to stay in school. This is probably the true situation, especially if a job would be difficult to find because of size. A fourth general statement is that: people with low intelligence, people from lower class homes, people with lower self-concepts, and those that mature early will drop out of school; those with higher intelligence, those from middle and upper class homes, those who mature late, and those with good personal adjustment will tend to remain in school.

Chapter 4

HYPOTHESES

THE FIRST HYPOTHESIS

The first general statement taken from the preceding chapter that "the self-concept is stable but it may change with time; the change, depending on maturation and learning, will be directly related to the length of the time interval," gives rise to the first hypothesis.

The self-concept is stable.

This hypothesis can be broken into four parts to take into consideration the three time intervals used in this study.

1. The self-concept for the first year is stable. There will be no significant change in the self-concept of continuands for all five self-areas from the time the first test was given when they were fifteen to the time of the second testing when they were sixteen.

2. The self-concept for the second year is stable. There will be no significant change in the self-concept of continuands for all five self-areas from the time the second test was given when they were sixteen to the time of the third testing when they were seventeen.

3. The self-concept for the two-year interval is stable. There will be no significant change in the self-concept of continuands for all

five self-areas from the time the first test was given when they were fifteen to the time of the third testing when they were seventeen.

4. The self-concept over the two-year interval should show less stability than each of the one-year intervals for all five areas.

THE SECOND HYPOTHESIS

The second general statement taken from the preceding chapter that, "the stability of the self-concept in late adolescence is related to a favorable concept of self, favorable intelligence, middle or upper socio-economic status, and early maturation; instability in the self-concept will result from an unfavorable concept of self, low intelligence, a lower class home, and late maturation," gives rise to the second hypothesis.

> Students in late adolescence with favorable intelligence, favorable social status, early maturation, and favorable self-concept will show more stability in all self-areas than those with unfavorable backgrounds in these same four areas.

This hypothesis can be broken into four parts, each dealing with the four influencing factors of the self—concept.

1. The self-concept of those with high intelligence is significantly more stable over the two-year interval than the self-concept of those with low intelligence for all self-areas.

2. The self-concept of those of high social status is significantly more stable over the two-year interval than the self-concept of those of low social status for all self-areas.

3. The self-concept of those who mature early is significantly more stable over the two-year interval than the self-concept of those who mature late for all self-areas.

4. The self-concept of those with favorable self-concepts at fifteen is significantly more stable over the two-year interval than the self-concept of those with unfavorable self-concepts at fifteen for all the self-areas.

THE THIRD HYPOTHESIS

The third general statement taken from the preceding chapter that, "favorability of self-concept will be related to intelligence, social status, early age of maturation, and sex (in favor of girls); unfavorability will be related to low intelligence, low social status homes, late age of maturation, and sex (boys)," gives rise to the third hypothesis.

Students aged fifteen with favorable intelligence, favorable social status, early maturation, and belonging to the female sex will have significantly higher self-concepts than those with unfavorable backgrounds and belonging to the male sex.

1. The mean age fifteen self-concept scores will be significantly higher in all areas for those students with high intelligence than those with low intelligence.

2. The mean age fifteen self-concept scores will be significantly higher in all areas for those students of high social status than those with low social status.

3. The mean age fifteen self-concept scores will be significantly higher in all areas for those students who mature early than those who mature late.

4. The mean age fifteen self-concept scores will be significantly higher in all areas for girls than for boys.

THE FOURTH HYPOTHESIS

The fourth general statement taken from the preceding chapter that, "people with low intelligence, people from lower class homes, people who mature early, and those with unfavorable self-concepts will drop out of school; those with higher intelligence, those from middle and upper class homes, those who mature late, and those with good personal adjustment will tend to remain in school," gives rise to the fourth hypothesis.

Continuands will have significantly higher intelligence, come from better homes, mature later, and have better self-concepts than the students who drop out of school.

This hypothesis can be broken into two parts.

1. Continuands will show significantly higher means for intelligence scores, social status scores, and age of maturation than drop-outs.

2. In all self-area scores, the means will be significantly higher for fifteen year olds who continue than fifteen year olds who will drop out of school.

Chapter 5

APPROACH

THE INVENTORY

The Taschuk-Hepburn Inventory of Self which was used in the present study is based upon the self-inventory developed by W. A. Taschuk (1957b) at the University of Alberta. The Taschuk inventory was revised by D. W. Hepburn in 1958 and seven ambiguous items were omitted. Hepburn's study, which attempted to validate the inventory by comparing the self-inventory results with individual counselling, has not been published. The revised Taschuk-Hepburn Inventory of Self has four self-areas: the mental self scores, the physical self scores, the social self scores, and the personal self scores. When combined, these four area scores make up the total self-concept score. Each item has a score range from one, for the least favorable reply, to five for the most favorable reply. The total scores for each area and for the whole inventory can be obtained and the higher the total score, the more favorable is the area self-concept or the total self-concept. Appendix I gives a copy of the Taschuk-Hepburn Inventory of Self as it was used in this study.

ADMINISTRATION OF THE INVENTORY

The Taschuk-Hepburn Inventory of Self was administered to the total grade ten population at the Eastglen Composite High School in the early autumn of 1958 by Dr. S. C. T. Clarke and W. A. Taschuk. The entire set of 426 inventories used in the Clarke-Taschuk study were obtained by the present writer to begin a longitudinal self-concept study.

The Taschuk-Hepburn Inventory of Self was administered to the grade eleven class at the Eastglen Composite High School in the early autumn of 1959. Of the original 426 students taking the inventory the year before, 314 took it in grade eleven. The missing students had either transferred to other schools or dropped out of school.

In the early autumn of 1960, the inventories were administered to the grade twelve classes at the Eastglen Composite High School and to students who had transferred to the newly opened Queen Elizabeth Composite High School and Victoria Composite High School. These schools now served a large area formerly served by the Eastglen Composite High School. The number of students in grade twelve who had taken this and former inventories was 240.

THE POPULATION SAMPLE

The original sample for this study came from one large high school in the city of Edmonton. The area served by this high school is made up, predominantly, of skilled, semi-skilled, and unskilled workers. The

chief industries in this section of the city are three important meat packing plants which employ many of the residents.

The Blishen (1958) study ranked all the people of Canada from the 1951 census, according to occupation, into a social status scale. The two chief factors used in this scale were income and education needed for the occupation. The scale had a mean of 50 and a standard deviation of 10. The occupation "scores" ranged from 90.0 (judges) to 32.0 (hunters and trappers). The scale divided the population into seven classes as shown in Table 1.

The number of people in each class was compiled by Blishen and converted into percentages. This was also done for the total group in the present study, the group that made up the sample, and the drop-outs. These percentages are given in Table 2, page 47.

The social status of the original 426 students was generally higher than for the total Canadian population. The group showing the greatest difference was in the unskilled labor group which was 10 percent higher for Canada as a whole. The sample of 130 students finally chosen for the study were still higher in social status than the people of Canada taken as a whole. They did not differ markedly in pattern from the original group but they did tend to be a little higher. This is probably due to the removal of the drop-outs who tended to be lower, in general, from the original group and sample. (From these data we can feel that the final

Table 1

Classes in the Blishen Scale

Class	Score Range	General Occupation Categories	Examples
1	90.0-73.2	Prestige Professions	judges, lawyers, architects
2	72.9-57.0	Professional-Managerial	professors, officers, retail managers
3	56.9-52.0	Highly Skilled-Clerical	bookkeepers, toolmakers stenographers
4	51.9-50.5	Skilled-Low Clerical	foremen, clerks, radio repairmen
5	50.4-45.1	Skilled-Service	policemen, electricians, farmers
6	45.0-41.8	Semi-skilled Labor	elevator operators, painters, truckers
7	41.7-32.0	Unskilled Labor	janitors, farm laborers, trappers

Table 2

Percentage of People in Blishen's Classes for Canada, the Original Group, the Sample Used, and Drop-Outs

Class	Percentage of People in Blishen's Classes			
	Canada	Original Group	Sample	Drop-Outs
1	.9	2.0	2.3	1.8
2	10.7	13.6	14.6	9.1
3	6.3	9.9	13.0	7.3
4	7.0	5.1	8.5	5.4
5	34.2	35.0	35.5	38.2
6	19.6	23.0	16.1	29.1
7	21.3	11.4	10.0	9.1
N =	17,000,000	426	130	55

sample represents the original group fairly well but is a little too high, as far as social status is concerned, to represent Canada as a whole.)

Since the data for this study was to be processed by the Computing Center at the University of Alberta, complete sets of information were required for each individual in order to use the data cards in the computer. The final sample chosen was 130 students who had complete sets of data.

The original sample of 426 students was reduced to 314 during the first year. Of the 112 students missing, 65 had dropped out, 23 had transferred to other schools, and 22 were attending the Victoria Composite High School as the result of a school boundary change. During the third administration of the inventory, 262 students completed it including the 22 who had gone to the Victoria Composite High School the year before. This left 240 students who had completed the full set of inventories from the three consecutive administrations. The loss of the 74 students during the second year was made up of 64 drop-outs and 10 transfers to other schools. In order to determine which students were drop-outs and which students were transfers, registrations at the Examinations Branch, Department of Education, Edmonton, were examined. These lists were made available to the writer each February.

A summary of the sample used, showing the numbers of people retained and rejected from the study, is found in Table 3.

Table 3

Summary of Population Sample

	Continuands		Grade 10 Drop-outs		Grade 11 Drop-outs		Absent for Grade 11		Transferred in Grade 10		Transferred in Grade 11		
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Total
Continuands Used in Study	71	59											130
Drop-Outs Used in Study			8	10	8	29							55
Students Older Than 15	21	3	8	11	6	7	1	1	2	1		1	62
Students Younger Than 15	32	25	3	2	2	1	3	2	2	3	2	2	79
Data not on Cum. Card	10	16	5	13	3	8	3	1	3	5	2		69
Cum. Card Missing	2	1	4	1			2		1				11
Transferred Away									6	2	2	1	11
Inventory Not Taken, Grade 11							8	1					9
Total	136	104	28	37	19	45	17	5	14	11	6	4	426

THE DATA

Twenty items of information were gathered for each student. Fifteen of these items were the five area scores from the Taschuk-Hepburn Inventories of Self over the three testing intervals. The other five pieces of information were obtained from the cumulative record cards. These were the age of each student when he began grade ten, an estimate of the IQ of each student, the occupation of the father of each student, the age when each student's growth spurt occurred, and the sex of each student.

Because the range of ages for the students taking the inventory in grade ten was from 13 years 2 months to 20 years 5 months, it was decided to include in the study only the students in their fifteenth year. The range of 7 years 3 months for all the students was so wide that it would include students in many different phases of physical maturation and social development. There were 79 students younger than fifteen and 62 students older than fifteen; consequently, these 141 students were dropped from the study. The study will refer to fifteen-year-olds, sixteen-year-olds, and seventeen-year-olds rather than grade ten students, grade eleven students, and grade twelve students.

An estimate of the IQ of each student was made by consulting the scores recorded on the cumulative record cards. For most students, four scores were shown: scores for the Detroit Beginning First-Grade

Intelligence Test, the Laycock Intelligence Test, the California Test of Mental Maturity, and the Otis Quick-scoring Mental Ability Test, Gamma. The estimated IQ scores had a mean of 108.9 and a standard deviation of 9.0. Students with high IQ's were taken as those with scores greater than one standard deviation above the mean or with scores of 118 or above. Students with low IQ's were taken as those with scores less than one standard deviation below the mean or with scores of 99 or less. Of the 120 students used in the study, there were 21 classified as having high IQ's and there were 19 classified as having low IQ's.

The social status of each student was found from the occupation of his father and compared to the Occupational Class Scale made by Blishen (1958). This scale assigns a number, ranging from 90 for the highest social standing occupation to 32 for the lowest social standing occupation, to each occupation. It also divides the occupations into four broad categories according to social standing, upper (managerial-professional) occupations with scores above 57, upper-middle (clerical) occupations, lower-middle (skilled) occupations, and low (unskilled) occupations with scores below 45. Of the 130 students used in the study, 22 were classified as upper social status and 34 classified as having low social status.

The maturation age for each student was found by examining the growth records to find the year the growth spurt took place. This age was converted to months by multiplying by twelve. The range for the boys was

from 132 months to 204 months and the range for the girls was from 120 months to 204 months. The average age for the boys was 173.4 months (in their 14th year), while the average age for the girls was 159.7 months (in their 13th year). The girls maturing at age 12 or before and the boys maturing at age 13 or before were considered as early maturers. The girls who matured at 15 or later and the boys who matured at 16 or later were considered as late maturers. There were 32 students (13 boys and 19 girls) considered as early maturers from the 130 students used, and there were 24 late maturers (10 boys and 14 girls).

The sex of each student was found from the cumulative record cards and used in some parts of the study for classification for other data. There were 71 boys and 59 girls retained in the study.

The self-scores were found from the inventories and classified into the five areas: mental, physical, social, personal, and total. The total self-concept scores in grade ten had a mean of 266.8. The 24 fifteen-year-olds scoring a total score of 291 or above were considered to have high self-concepts and the fifteen-year-olds scoring a total of 243 or below were considered to have low self-concepts. These scores were chosen because they are one standard deviation above the mean and one standard deviation below the mean.

Eighteen scores were used in the study and these scores were placed on cards to be processed by the Computing Center. These scores were:

1. Estimated IQ's
2. Social Status
3. Maturation Age in Months
4. Mental Self-scores at 15
5. Physical Self-scores at 15
6. Social Self-scores at 15
7. Personal Self-scores at 15
8. Total Self-scores at 15
9. Mental Self-scores at 16
10. Physical Self-scores at 16
11. Social Self-scores at 16
12. Personal Self-scores at 16
13. Total Self-scores at 16
14. Mental Self-scores at 17
15. Physical Self-scores at 17
16. Social Self-scores at 17
17. Personal Self-scores at 17
18. Total Self-scores at 17

The same data, except for self-scores at age sixteen and seventeen, were gathered for the 55 drop-outs. The cards for the drop-outs contained eight scores which were:

1. Estimated IQ
2. Social Status
3. Maturation Age
4. Mental Self-scores at 15
5. Physical Self-scores at 15
6. Social Self-scores at 15
7. Personal Self-scores at 15
8. Total Self-scores at 15

TREATMENT OF THE DATA

The eighteen scores for the 130 continuands were converted to three digit numbers and put on computing cards. These cards were then processed at the Computing Center at the University of Alberta and the following data obtained.

1. The means for each of the 18 items.
2. The standard deviations for each of the 18 items.
3. The 136 Pearson product-moment correlation coefficients obtained by intercorrelating all the 18 items.

This gave the data shown in the first table in Appendix II.

The same procedure was used with different sub-classifications of the 130 students and was carried out ten times giving the data found in the next ten tables in Appendix II. The sub-classifications for the 130 continuands were:

1. Scores for 59 girl continuands.
2. Scores for 71 boys continuands.
3. Scores for 24 with high self-concepts at 15.
4. Scores for 22 with low self-concepts at 15.
5. Scores for 22 with high social status.
6. Scores for 34 with low social status.
7. Scores for 33 early maturing continuands.
8. Scores for 23 late maturing continuands.
9. Scores for 21 with high IQ's.
10. Scores for 19 with low IQ's.

The means and standard deviations used in Appendix II have been converted from the three digits used in the computer to their correct number.

The eight scores for the 55 drop-outs were processed and the following data were found:

1. The means for each of the eight items.
2. The standard deviations for each of the eight items.
3. The 28 Pearson product-moment correlation coefficients obtained from intercorrelating the eight items.

These data are placed in the twelfth table in Appendix II.

Means and standard deviations only were found for the scores for the following sub-classifications:

1. Girl drop-outs.
2. Late-maturing girls.
3. Early maturing girls.
4. Boy drop-outs.
5. Late maturing boys.
6. Early maturing boys.

These data are placed in the thirteenth and fourteenth tables of Appendix II.

Data pertaining to this particular study were selected and used in Chapter 6. The significance of Pearson product-moment correlation coefficients from zero was calculated according to the method found in Walker and Lev (1953, p. 251). The significance of difference of correlated and uncorrelated means was found by the methods given in Ferguson (1959, pp. 131-156). Significance of differences of means with significantly different variances were found by the Cochrane and Cox method as outlined in Ferguson (1959, p. 143).

Chapter 6

RESULTS

The following tables summarize the data collected in the present study.

Table 4

The Relationship of Self-Concept Scores at Different Ages for the 130 Continuands

Ages Being Compared	Different Self-Scores				
	Mental	Physical	Social	Personal	Total
Age 15 with Age 16	.43*	.57*	.53*	.15	.60*
Age 16 with Age 17	.34*	.54*	.54*	.07	.70*
Age 15 with Age 17	.37*	.48*	.48*	.57*	.58*

* Pearson product-moment correlation coefficients significantly different from zero at the .05 level.

Table 5

The Relationship of Self-Concept Scores at Age 15 and at Age 17
for Special Groups of Continuands

Continuand Groups Being Compared	Different Self-Scores				
	Mental	Physical	Social	Personal	Total
21 of High Intelligence	.26	.51*	.34	.55*	.58*
19 of Low Intelligence	.33	.79*	.59*	.46*	.64*
22 of High Social Status	.32	.71*	.18	.32	.41
34 of Low Social Status	-.04	.59*	.27	.59*	.45*
33 Early Maturing	.35*	.46*	.49*	.51*	.56*
23 Late Maturing	.45*	.62*	.22	.71*	.64*
24 High Self-scores at 15	.17	.40*	.21	-.02	-.06
22 Low Self-scores at 15	.47*	.03	.51*	.53*	.56*

* Pearson product-moment correlation coefficients significantly different from zero at the .05 level.

Table 6

A Comparison of Mean Self-Scores for Different Groups of Continuands at Age Fifteen

Groups Being Compared	Self-Concept Areas Being Compared									
	Mental		Physical		Social		Personal		Total	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
21 of High Intelligence	11.6	1.5	47.2	6.1	105.3	8.9	99.9	8.9	263.8	20.7
19 of Low Intelligence	10.2	2.5 *	52.0	6.7 *	106.7	10.3	97.7	12.6	266.6	25.4
22 of High Social Status	12.0	1.8	51.5	6.3	107.8	10.0	101.5	10.5	272.8	23.4
34 of Low Social Status	11.0	1.7	49.1	6.4	104.3	8.5	99.0	9.3	263.0	19.5
33 Early Maturers	11.2	2.0	48.9	8.1	106.5	9.3	99.3	11.2	265.2	25.9
23 Late Maturers	11.0	1.4	48.8	6.5	103.7	7.5	99.0	10.3	262.2	20.0
59 Boys	11.2	1.4	51.1	7.2	106.8	8.3	100.5	10.0	269.4	20.0
71 Girls	10.9	2.5	49.7	6.6	104.9	9.8	99.5	11.6	264.7	25.9

* Shows pairs of means significantly different at the .05 level.

Table 7

A Comparison of Continuand and Drop-Out Mean Scores
in Different Areas at Age Fifteen

Groups	Scores Being Compared									
	Comparisons of Self-Score Means									
	Mental		Physical		Social		Personal		Total	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
130 Continuands	11.0	2.1	50.3	6.9	105.8	9.2	99.9	10.9	266.8	23.5
55 Drop-outs	10.4	2.4	50.0	8.0	107.4	9.5	98.2	11.1	266.9	25.8

	Comparisons of Intelligence, Social Status, and Maturation Age Means					
	Intelligence		Social Status		Maturation Age	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
130 Continuands	108.8	9.0	50.0	7.5	167.2	17.5
55 Drop-outs	105.5 *	7.4	48.0	6.4	157.3 *	16.0

* Shows pairs of means significantly different at the .05 level.

Chapter 7

CONCLUSIONS AND COMMENTS

CONCLUSIONS

Conclusions Related to Self-Concept Stability

The general conclusion, drawn from the data in Table 4 comparing self-concepts over a period of time, is that the self-concept for late adolescents is stable for one and two year intervals. This is shown by the high proportion of significant Pearson product-moment correlation coefficients--thirteen out of fifteen. This supports the first part of the first hypothesis.

Conclusions drawn from the data for area self-scores were:

1. The mental self-concept is stable for one and two year intervals.

2. The physical self-concept is stable for one and two year intervals.

3. The social self-concept is stable for one and two year intervals.

4. The personal self-concept is not as stable as the other area self-concepts.

5. The total self-concept is stable for one and two year intervals.

The second and third parts of the first hypothesis are supported.

Conclusions related to more stability for one year intervals than two year intervals for the five areas are:

1. For mental self-scores, the two year interval shows more stability than one of the one year intervals.

2. For physical self-scores, the two year interval shows less stability than either of the one year intervals.

3. For social self-scores, the two year interval shows less stability than either of the one year intervals.

4. For personal self-scores, the two year interval shows much greater stability than either of the one year intervals.

5. For the total self-concept scores, the two year interval shows less stability than either of the one year intervals.

No definite conclusion can be drawn for the fourth part of the first hypothesis. The evidence gives more support for the hypothesis than contrary evidence.

Conclusions Related to Self-Concept Stability and Influencing Factors

The general conclusion, drawn from the data in Table 5 showing self-concept stability in relation to intelligence, social status, maturation age, and favorableness of self-concept, is that no general pattern emerges.

Data related to each of the four influencing factors gives the following conclusions:

1. Continuands with low intelligence have more stable self-concepts than those with high intelligence except for personal self-scores.

2. Continuands of high social status do not have self-concepts more stable than those of low social status.

3. Continuands who matured late have more stable self-concepts than those who mature early for all areas except social self-score.

4. Continuands who had unfavorable self-concepts at fifteen have more stable self-concepts for all areas except physical self-scores.

No support is given for the second hypothesis except for one or two area scores. Considerable evidence seems to run counter to parts of the hypothesis.

Conclusions Related to Favorability of Self-Concept and Influencing Factors

The general conclusion, drawn from the data in Table 6 showing self-concept favorability and its relation to intelligence, social status, age of maturation and sex, is that these factors do not greatly influence the self-concepts of fifteen-year-old continuands in high school.

Conclusions drawn from the data for each of the influencing factors were:

1. There is little effect of intelligence on self-concept except for mental self-scores and physical self-scores. It affects mental

self-scores as hypothesized, but has a reverse effect on physical self-scores.

2. There is little, if any, affect of social status on self-concept.

3. There is little, if any, affect of maturation age on self-concept.

4. There is little, if any, affect of sex differences on self-scores.

No support is given to the third hypothesis except for one area score and one influencing factor. However, all the means, except one, go in the direction forecast, and all except one fail to reach significance.

Conclusions Related to Differences Between Continuands and Drop-Outs

The general conclusion drawn from the data in Table 7 comparing continuands and drop-outs is that two differences exist between those who drop out and those who continue--maturation age and intelligence.

Conclusions for each part were:

1. A difference exists between the intelligence of continuands and drop-outs with continuands scoring higher.

2. No difference exists between the social status of continuands and drop-outs.

3. A difference exists between the maturation age of continuands and drop-outs with continuands being later maturing.

4. No difference of self-concept exists between continuands and drop-outs for any of the area scores at age fifteen.

Two parts of the hypothesis are supported and two are not supported.

COMMENTS

Comments from Conclusions

Since the conclusions in Chapter 7 did not support the hypotheses in a number of instances, some attempt will be made to explain why these discrepancies exist. There may be many reasons for these differences between the expected findings and the findings of the study, and some of these may be overlooked in the following paragraphs.

The first hypothesis, that the self-concept is stable, received strong support from the findings in all areas except the personal self-scores over one-year intervals. Since many of the items of the personal self-concept part of the inventory are based on emotions (I am restless, I am a happy person, I am nervous, etc.), the responses to these items will depend upon the subject's feelings at the time he writes the inventory. These feelings may change greatly from one writing to the other as swings in emotion are rather characteristic of adolescents according to Garrison (1958, p. 229), and this may account for the instability in the personal self-concept. The stability of the personal self over the two-year interval is rather difficult to account for since instability was found in each of the

one-year intervals that go to make up the two-year interval. The stability may be a function of the general stability of the self-concept.

From the findings, it does not seem that intelligence of high school students has any effect on the stability of the self-concept. Both those of high intelligence and those of low intelligence showed more stability of the self-concept than instability, with those of low intelligence showing slightly more stability. The stability shown may again be a result of the overall self-concept stability. The instability of the mental self-concept may be a result of the small number of items that go to make up the mental self. The apparent instability of the social self-concept for those of high intelligence is difficult to explain; however, the instability is not too great as the correlation very nearly reached significance. Another item should be mentioned, since this is a high school group: the intelligence scores are normal or above normal with only one or two instances of really "low intelligence."

The adolescents from high social status homes do not show a great deal of stability of self-concept except for the physical self. There does not appear to be any apparent reason for this. Those from low social status homes should have shown more instability according to the hypothesis, but instead they showed more stability. The instability of the social self-concept for those from low social status homes may be related to their social background as this is one of the two areas showing instability. It is difficult to explain why those from high social status

homes have less stability of self-concept than those from low social status homes. The larger population sample for those from low social status homes may have some bearing on the results.

The students who matured early showed stability in self-concept in all areas giving support to the hypothesis. Those who matured late also showed a general self-concept stability which is contrary to what the hypothesis stated. The only area showing instability was the social self-concept of late maturing students. This is probably a true picture because it would seem that students who mature late would see themselves as socially inferior at the time of the first testing but would see themselves more favorably at the second testing when almost all had matured. Stability would not be expected in the physical self-concept for late maturers but the findings do not confirm this. Maturation would have less effect on mental self-scores, personal self-scores, and total self-scores than on social self-scores and physical self-scores.

The stability of the self-concept for those with low self-concepts at fifteen and the instability of self-concepts of those with more favorable self-concepts at fifteen is difficult to account for. The reversal of this pattern in the physical self-concept is what one would expect from the research examined but the lack of support for the hypothesis in the other areas is hard to explain. The physical self-concept is the only area which supports the hypothesis.

The numbers chosen as samples for high and low intelligence, high and low social status, early and late maturation, and high and low self-scores are quite small. Since most of these numbers are approaching the minimum required to calculate correlation coefficients, it may have put some of the findings in error.

The lack of relationships between self-concept favorability and the influencing factors of intelligence, social status, maturation age, and sex differences, are rather difficult to see. A reason for a lack of these apparent relationships may be the small sample size, but it seems as if more is involved than this. All the means, except one, go in the direction forecast by the hypothesis. All failed to reach the required level of significance except two: one was the reverse relationship (physical self-scores and intelligence) and the other was mental self-scores and intelligence. We would expect mental self-scores to be influenced by intelligence, but the reverse effect of intelligence on physical self-scores is rather strange. The lack of influence of social status on self-scores may be due to a greater homogeneity of social patterns in the district studied than one would expect. The lack of influence of maturation age on self-scores is rather difficult to accept since most of the literature seems to say there is a difference. The lack of differences in self-scores for boys and girls was almost expected since the results of other researchers seem inconclusive.

The findings comparing continuands and drop-outs show that there is a difference in intelligence scores and maturation age in the direction forecast. There was no difference in the social status scores of drop-outs and continuands. The lack of difference in social status scores is rather difficult to explain since evidence from research supports the hypothesis. This lack of difference may be peculiar to the sample used only. The finding that maturation age of drop-outs is significantly lower than for continuands is rather important because no evidence linking maturation age and school drop-outs could be found in research articles.

The lack of difference between self-concept area scores for drop-outs and continuands does not agree with the hypothesis. Personality differences, as research suggests, probably exist between continuands and drop-outs, but none were discovered in this study.

Limitations of the Study

The present study has limitations to its value. Some are presented below.

1. The Taschuk-Hepburn Inventory of Self gives area scores, but these are unbalanced. It gives a fair indication of a student's self-concept in some areas, but it is limited in others such as the mental self-concept which has only three items. The greatest number of items is used to make up the personal self-concept, which has twenty-six.

2. The sample used for the study had limitations. The two most serious are that the sample did not represent the city of Edmonton or represent Canada, and that only about half of the people involved were actually used. The Eastglen Composite High School area does not have a large upper and middle class area to draw students from such as areas found in the western part of the city. Its predominantly lower class homes would give a biased sample. The students lost from the study by transfer or from lack of information would perhaps leave an unrepresentative sample even for the Eastglen area.

3. Wylie (1961, p. 31) stressed the need for rapport in obtaining self-concept reports. Since the present study was carried out by group inventories on a large group of students who were unknown to the experimenters, rapport may have been lost or even non-existent for many students. A carefully worded letter was sent to each teacher to read to each class before taking the inventory, but this may not have been enough.

4. The Taschuk-Hepburn Inventory of Self has not been validated even though Taschuk (1957b, p. 54) found that it was quite reliable.

5. The method used for determining maturation age from height and weight charts was not too accurate on many occasions even though some indication was given.

Further Research Arising from the Study

Much of the proposed further research here comes from the limitations of the study. To get more accuracy of results, areas should be expanded to include larger samples and more time as well as more work carried out with the inventory.

1. Another study of self-concept stability could be attempted profitably. This new study should have a larger and more representative student sample. It should be carried out much longer, from childhood to young adulthood and an improved, validated inventory used. This would then give a better indication of self-concept stability.

2. A study improving and validating the Taschuk-Hepburn Inventory of Self would be valuable in producing a measuring instrument that would be more accurate and more useful.

3. A study relating behavior and self-concept would be valuable in counseling and planning school programs. A study relating school achievement to self-concept and a study relating self-concept to such things as social behavior and emotional adjustment would be valuable but probably quite difficult to carry out.

4. A study of self-concept items over a period of time would be valuable to see in what areas the self-concept would change with time. If this were done for continuands and drop-outs, a method of helping predict drop-outs may emerge.

5. Since no definite findings relating the stability of the self-concept to intelligence, maturation age, and social status were found, this study could be repeated with improvements. A larger sample, a better measure of maturation, a more heterogeneous social class sample, and a less biased sample in regard to intelligence should be used to give more accurate results.

6. Since no definite relationships appear to exist in the present study between self-concept and influencing factors such as intelligence, social status, maturation age, and sex, another study using a much larger and more heterogeneous sample could be attempted. A well designed study in this area could give a real contribution to psychology because there seems to be conflicting evidence in a number of places.

7. A study following up the relationship between maturation age and drop-outs would be very valuable. The relationship has not been explored as far as the writer could determine because no research was found relating these two things. This may be an important factor in students dropping out of school in Alberta. The study should include a large sample and maturation age should be determined in a more accurate manner than the method used in this study.

Educational Implications

Only one educational implication seemed to be evident from the findings of this study. This implication involves the relationship found between drop-outs and an early age of maturation. If early maturation age

is a factor in students dropping out of school, some provisions should be carried out which takes this into consideration. If more mature students feel out of place in school and resent being with less mature people and being treated as children, the schools should take this into consideration when planning programs and organizing the operation. Curriculum should also be changed to meet the needs of these "new individuals" earlier.

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APPENDIX I

THE TASCHUK-HEPBURN INVENTORY OF SELF

TASCHUK-HEPBURN INVENTORY OF SELF

DIRECTIONS FOR SELF-CONCEPT

Everyone needs to know more about himself, but seldom do we stop to look at ourselves as we really are. On the following pages are statements used by young people to describe themselves. You are asked to mark each statement as directed below. Your answers are confidential and will not be read by anyone not concerned with this study. Be honest with yourself so that your description will be a true measure of how you look at yourself.

The letters following each statement have the following meanings:

T True of me--a good description of me

MT Mostly true of me--but not completely true

N Neither true nor false--doesn't apply to me

MF Mostly false of me--like me only to a small extent

F False of me--not like me at all

Read each statement and decide how true it is of you. Then circle and mark the letter or letters following each statement to indicate how true it is of you.

EXAMPLES:

a. I am an agreeable person T (MT) N MF F

b. I am childish T MT N MF (F)

Following statement (a) the letters MT are circled and marked indicating that the statement is mostly true of you, but not completely true.

Following statement (b) the letter F is circled and marked indicating that the statement is false of you, not like you at all.

Please make only one mark after each statement. Complete all the items. There is no time limit, but do not spend too much time on any one statement so that you can complete all the statements during this class period.

Name_____ School_____

1.	I am honest	T	MT	N	MF	F
2.	I can't stand criticism	T	MT	N	MF	F
3.	I have many friends	T	MT	N	MF	F
4.	People can depend on me	T	MT	N	MF	F
5.	I have patience with others	T	MT	N	MF	F
6.	I have a good sense of humor	T	MT	N	MF	F
7.	I have confidence in myself	T	MT	N	MF	F
8.	People who know me, like me	T	MT	N	MF	F
9.	I am a lonely person	T	MT	N	MF	F
10.	My teachers like me	T	MT	N	MF	F
11.	I wear my clothes well	T	MT	N	MF	F

12.	I understand myself	T	MT	N	MF	F
13.	There is nothing outstanding about me	T	MT	N	MF	F
14.	I make up my mind easily	T	MT	N	MF	F
15.	Religion plays an important part in my life	T	MT	N	MF	F
16.	I think clearly	T	MT	N	MF	F
17.	I make a bad impression on people	T	MT	N	MF	F
18.	I am capable of looking after myself	T	MT	N	MF	F
19.	I am loyal to my friends	T	MT	N	MF	F
20.	I am likeable	T	MT	N	MF	F
21.	I am brave	T	MT	N	MF	F
22.	I am truthful	T	MT	N	MF	F
23.	I am a flirt	T	MT	N	MF	F
24.	I am kind	T	MT	N	MF	F
25.	I get along with others	T	MT	N	MF	F
26.	I have good self control	T	MT	N	MF	F
27.	I am ambitious	T	MT	N	MF	F
28.	I am intelligent	T	MT	N	MF	F
29.	I am attractive	T	MT	N	MF	F
30.	My feelings are easily hurt	T	MT	N	MF	F
31.	I am helpful to others	T	MT	N	MF	F
32.	I am attractive to members of the opposite sex	T	MT	N	MF	F
33.	I worry about little things	T	MT	N	MF	F

34.	I envy others	T	MT	N	MF	F
35.	I get along well with members of the opposite sex	T	MT	N	MF	F
36.	I am a happy person	T	MT	N	MF	F
37.	I am good at sports	T	MT	N	MF	F
38.	I am easily discouraged	T	MT	N	MF	F
39.	I am unable to solve my problems	T	MT	N	MF	F
40.	Most people avoid me	T	MT	N	MF	F
41.	I have good common sense	T	MT	N	MF	F
42.	I am nervous (jumpy)	T	MT	N	MF	F
43.	I am clumsy	T	MT	N	MF	F
44.	I am considerate of others	T	MT	N	MF	F
45.	I like my parents	T	MT	N	MF	F
46.	I am a good dancer	T	MT	N	MF	F
47.	I settle down to work easily	T	MT	N	MF	F
48.	I am good looking	T	MT	N	MF	F
49.	I have good taste in clothing	T	MT	N	MF	F
50.	I feel at ease when others are around	T	MT	N	MF	F
51.	I am just the right weight	T	MT	N	MF	F
52.	I have good judgment	T	MT	N	MF	F
53.	I am a good sport	T	MT	N	MF	F
54.	I get along well with members of my own sex	T	MT	N	MF	F
55.	I am shy	T	MT	N	MF	F

56.	I have a lot of energy	T	MT	N	MF	F
57.	I know right from wrong	T	MT	N	MF	F
58.	People take advantage of me	T	MT	N	MF	F
59.	I am easily embarrassed	T	MT	N	MF	F
60.	I am restless	T	MT	N	MF	F
61.	I worry about my health	T	MT	N	MF	F
62.	I am respected by others	T	MT	N	MF	F
63.	I am courteous	T	MT	N	MF	F
64.	I am co-operative	T	MT	N	MF	F
65.	I have good eyesight	T	MT	N	MF	F
66.	I am a disappointment to my parents	T	MT	N	MF	F
67.	I am neat and tidy	T	MT	N	MF	F
68.	I daydream a lot	T	MT	N	MF	F
69.	I am a hard worker	T	MT	N	MF	F
70.	I am just the right height	T	MT	N	MF	F

Mental Self-Scores

The following three items go to make up the Mental Self-Concept of the Taschuk-Hepburn Inventory of Self.

1. I make up my mind easily
2. I think clearly
3. I am intelligent

Physical Self-Scores

The following fourteen items go to make up the Physical Self-Concept of the Taschuk-Hepburn Inventory of Self.

1. I wear my clothes well
2. I am attractive
3. I am attractive to members of the opposite sex
4. I am good at sports
5. I am clumsy
6. I am a good dancer
7. I am good looking
8. I have good taste in clothing
9. I am just the right weight
10. I have a lot of energy
11. I worry about my health
12. I have good eyesight
13. I am neat and tidy
14. I am just the right height

Social Self-Scores

The following twenty-six items go to make up the Social Self-Concept of the Taschuk-Hepburn Inventory of Self.

1. I have many friends
2. People can depend upon me
3. I have patience with others
4. People who know me, like me
5. I am a lonely person
6. My teachers like me
7. I make a bad impression on people
8. I am loyal to my friends
9. I am likeable
10. I am a flirt
11. I get along with others
12. I am helpful to others
13. I get along well with members of the opposite sex
14. Most people avoid me
15. I am considerate of others
16. I like my parents
17. I feel at ease when others are around
18. I am a good sport
19. I get along well with members of my own sex
20. I am shy

21. People take advantage of me

22. I am easily embarrassed

23. I am respected by others

24. I am courteous

25. I am co-operative

26. I am a disappointment to my parents

Personal Self-Scores

The following twenty-seven items go to make up the Personal Self-Concept of the Taschuk-Hepburn Inventory of Self.

1. I am honest

2. I can't stand criticism

3. I have a good sense of humor

4. I have confidence in myself

5. I understand myself

6. There is nothing outstanding about me

7. Religion plays an important part in my life

8. I am capable of looking after myself

9. I am brave

10. I am truthful

11. I am kind

12. I have good self control

13. I am ambitious

14. My feelings are easily hurt

15. I worry about little things

16. I envy others

17. I am a happy person

18. I am easily discouraged

19. I am unable to solve my problems

20. I have good common sense

21. I am nervous (jumpy)

22. I settle down to work easily

23. I have good judgment

24. I know right from wrong

25. I am restless

26. I daydream a lot

27. I am a hard worker

APPENDIX II

A SUMMARY OF THE DATA GATHERED FOR THE STUDY

Correlations for 130 Continuands on 18 Items	N = 130	1 IQ	2 Social	3 Maturation	4 Mental 15	5 Physical 15	6 Social 15	7 Personal 15	8 Total 15	9 Mental 16	10 Physical 16	11 Social 16	12 Personal 16	13 Total 16	14 Mental 17	15 Physical 17	16 Social 17	17 Personal 17	Means for the 18 Items	Standard Deviations for the 18 Items
Estimated IQ	1																		108.8	9.0
Social Status	2	.13																	50.0	7.4
Maturation Age (Months)	3	-.12	-.14																167.2	17.5
Mental Score Age 15	4	.20	.12	-.01															11.0	2.1
Physical Score Age 15	5	-.19	.09	-.06	.26														50.3	6.9
Social Score Age 15	6	-.02	.15	-.18	.38	.48													105.8	9.2
Personal Score Age 15	7	.11	.09	.02	.40	.39	.62												99.9	10.4
Total Score Age 15	8	.00	.14	-.08	.51	.70	.85	.86											266.8	23.5
Mental Score Age 16	9	.20	.08	.05	.43	.09	.15	.26	.25										11.2	1.9
Physical Score Age 16	10	-.17	.15	-.04	.14	.57	.34	.25	.43	.23									50.9	7.4
Social Score Age 16	11	.01	.01	-.06	.22	.28	.53	.43	.52	.39	.47								105.7	8.5
Personal Score Age 16	12	-.10	-.05	.07	.04	.09	.05	.15	.12	.01	.01	.06							106.4	7.4
Total Score Age 16	13	.03	.07	-.01	.29	.41	.50	.55	.60	.49	.70	.88	.07						267.5	23.1
Mental Score Age 17	14	.15	-.20	-.00	.37	.13	.08	.23	.21	.34	.10	.15	.14	.27					11.0	1.7
Physical Score Age 17	15	-.03	.13	-.11	.22	.48	.33	.39	.44	.30	.54	.36	.08	.50	.27				51.6	7.3
Social Score Age 17	16	.06	.08	-.08	.26	.27	.48	.36	.46	.34	.34	.59	.04	.58	.25	.41			105.7	8.9
Personal Score Age 17	17	.20	-.08	-.01	.39	.23	.35	.57	.51	.46	.29	.49	.07	.64	.40	.42	.60		99.8	10.7
Total Score Age 17	18	.12	.05	-.07	.38	.41	.45	.53	.58	.45	.46	.58	.08	.70	.45	.70	.80	.87	268.2	22.3

Correlations of 59 Girl Continuands on 18 Items	N = 59	IQ	Social	Maturation	Mental 15	Physical 15	Social 15	Personal 15	Total 15	Mental 15	Physical 16	Social 16	Personal 16	Total 16	Mental 17	Physical 17	Social 17	Personal 17	Means for the 18 Items	Standard Deviations for the 18 Items
	N	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17		
Estirated IQ	1																		108.9	8.8
Social Status	2	-.05																	50.2	7.5
Maturation Age (Months)	3	.00	-.08																159.7	19.0
Mental Scores Age 15	4	.29	.11	.08															11.2	1.4
Physical Scores Age 15	5	-.13	.16	-.02	.20														51.1	7.2
Social Scores Age 15	6	-.04	.14	-.16	-.00	.42													106.8	8.3
Personal Scores Age 15	7	.29	.06	.08	.29	.31	.46												100.5	10.0
Total Scores Age 15	8	.09	.15	-.03	.27	.70	.78	.81											269.4	20.0
Mental Scores Age 16	9	.19	.05	.15	.43	.08	.03	.24	.19										11.1	1.7
Physical Scores Age 16	10	-.26	.18	.07	.04	.59	.31	.17	.41	.17									51.4	8.1
Social Scores Age 16	11	-.10	.02	.01	.04	.32	.51	.26	.47	.37	.50								107.5	8.1
Personal Scores Age 16	12	.17	.03	.16	.35	.31	.21	.54	.48	.50	.41	.64							100.0	10.8
Total Scores Age 16	13	-.03	.09	.12	.23	.48	.39	.41	.55	.49	.74	.85	.87						269.8	23.3
Mental Scores Age 17	14	.36	-.04	.03	.25	.02	-.07	.23	.11	.43	.02	.11	.38	.25					11.2	1.7
Physical Scores Age 17	15	-.12	.24	-.01	.08	.50	.19	.23	.37	.33	.48	.36	.31	.47	.32				52.3	8.1
Social Scores Age 17	16	-.04	.27	.00	.06	.18	.23	.10	.21	.43	.31	.46	.34	.47	.16	.36			107.7	7.4
Personal Scores Age 17	17	.29	-.07	.12	.31	.23	.10	.39	.34	.52	.26	.38	.70	.60	.41	.33	.51		100.8	11.0
Total Scores Age 17	18	.12	.15	.07	.24	.37	.20	.35	.40	.58	.42	.50	.63	.67	.47	.70	.76	.85	272.1	21.4

Correlations of 71 Boy Continuands on 18 Items	N = 71	IQ	Social	Maturation	Mental 15	Physical 15	Social 15	Personal 15	Total 15	Mental 16	Physical 16	Social 16	Personal 16	Total 16	Mental 17	Physical 17	Social 17	Personal 17	Means for the 18 Items Given	Standard Deviations for the 18 Items Given
	3																			
	N	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17		
Estimated IQ	1																		108.7	9.2
Social Status	2	.27																	49.8	7.4
Maturation Age Months	3	-.28	-.22																173.4	13.2
Mental Score Age 15	4	.17	.13	-.02															10.9	2.5
Physical Score Age 15	5	-.26	.03	-.03	.30														49.7	6.6
Social Score Age 15	6	-.00	.15	-.16	.54	.52													104.9	9.8
Personal Score Age 15	7	-.01	.11	.00	.46	.46	.71												99.5	11.6
Total Score Age 15	8	-.06	.13	-.07	.60	.70	.89	.90											264.7	25.9
Mental Score Age 16	9	.20	.10	-.10	.45	.10	.23	.28	.29										11.3	2.0
Physical Score Age 16	10	-.09	.10	-.14	.21	.55	.37	.33	.46	.29									50.5	6.7
Social Score Age 16	11	.09	-.00	.01	.30	.23	.53	.55	.55	.43	.44								104.3	8.6
Personal Score Age 16	12	-.14	-.07	.06	.03	.11	.05	.16	.13	-.04	-.03	.04							111.7	10.0
Total Score Age 16	13	.08	.05	-.08	.34	.32	.57	.65	.64	.50	.65	.91	.02						265.7	22.8
Mental Score Age 17	14	-.01	-.01	.06	.44	.21	.16	.23	.26	.30	.17	.15	.16	.20					10.9	1.8
Physical Score Age 17	15	.05	.01	-.17	.31	.44	.43	.44	.51	.29	.61	.36	.10	.52	.21				51.0	6.6
Social Score Age 17	16	.12	-.05	.00	.33	.31	.60	.50	.56	.32	.37	.65	.05	.64	.29	.45			104.0	9.7
Personal Score Age 17	17	.11	-.09	-.10	.45	.22	.53	.70	.62	.43	.32	.57	.04	.68	.39	.51	.68		99.1	10.4
Total Score Age 17	18	.11	-.04	-.10	.45	.42	.60	.65	.68	.38	.50	.61	.07	.71	.43	.71	.84	.89	265.0	22.4

Correlations for 24 with high self-scores at 15 on 18 Items	N = 24	IQ	Social	Maturation	Mental 15	Physical 15	Social 15	Personal 15	Total 15	Mental 16	Physical 16	Social 16	Personal 16	Total 16	Mental 17	Physical 17	Social 17	Personal 17	Means for the 18 Items Given	Standard Deviations for the 18 Items Given
	4																			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17		
Estimated IQ	1																		109.00	8.5
Social Status	2	.21																	51.8	8.7
Maturation Age (Months)	3	-.21	-.32																164.0	16.5
Mental Score Age 15	4	-.06	.06	-.06															12.5	1.2
Physical Score Age 15	5	-.24	-.48	.44	-.02														57.7	3.6
Social Score Age 15	6	-.08	.24	-.22	-.07	.07													116.5	4.8
Personal Score Age 15	7	.19	.27	.21	-.00	-.17	.02												111.6	3.7
Total Score Age 15	8	-.12	.10	.13	.16	.39	.71	.49											297.8	7.1
Mental Score Age 16	9	.34	-.11	.09	.73	.02	.04	.05	.17										11.9	1.3
Physical Score Age 16	10	.03	-.30	.36	.06	.53	-.07	-.27	.05	.20									55.2	6.8
Social Score Age 16	11	.06	-.12	.14	-.25	.04	.26	-.02	.15	.04	.49								110.6	8.2
Personal Score Age 16	12	.02	-.06	.17	-.01	.05	.16	.06	.18	.13	.58	.75							105.8	7.5
Total Score Age 16	13	.09	-.18	.22	-.03	.22	.14	-.10	.14	.21	.80	.86	.90						283.9	19.3
Mental Score Age 17	14	.16	-.16	.26	.17	-.01	-.26	.49	.12	.25	-.17	-.02	.13	-.02					11.3	1.3
Physical Score Age 17	15	-.18	-.23	.42	.22	.40	-.43	-.15	-.17	.05	.51	.07	.14	.28	.05				56.3	5.2
Social Score Age 17	16	.02	-.09	-.14	-.27	-.14	.21	-.10	.02	-.19	.12	.54	.44	.42	.08	.19			110.6	6.3
Personal Score Age 17	17	.02	-.39	.19	.06	.26	-.33	-.02	-.04	.15	.44	.21	.41	.41	.33	.23	.36		105.8	8.2
Total Score Age 17	18	-.02	-.35	.24	.02	.22	-.29	-.04	-.06	.05	.47	.39	.49	.52	.34	.59	.70	.82	284.1	14.6

Correlations for 22 with Low Self-Scores at 15 on 18 Items	5 N=22	IQ 1	Social 2	Maturation 3	Mental 15 4	Physical 15 5	Social 15 6	Personal 15 7	Total 15 8	Mental 16 9	Physical 16 10	Social 16 11	Personal 16 12	Total 16 13	Mental 17 14	Physical 17 15	Social 17 16	Personal 17 17	Means for the 18 Items Given	Standard Deviations for the 18 Items Given
Estimated IQ	1																		107.5	9.9
Social Status	2	.17																	49.1	6.4
Maturation Age (Months)	3	-.01	-.21																170.4	14.5
Mental Score Age 15	4	.33	.06	-.04															9.3	2.8
Physical Score Age 15	5	.06	-.23	.01	-.02														44.1	5.8
Social Score Age 15	6	.35	-.22	-.15	.32	-.14													92.9	7.2
Personal Score Age 15	7	.40	-.13	-.04	.36	.21	-.06												83.9	6.3
Total Score Age 15	8	.03	-.24	-.09	.60	.51	.50	.66											229.4	13.8
Mental Score Age 16	9	.37	.08	-.18	.25	-.24	-.11	.20	.04										10.3	2.9
Physical Score Age 16	10	-.21	.19	-.23	-.16	.18	.17	-.13	.08	-.10									46.3	4.6
Social Score Age 16	11	.13	-.07	-.08	.35	-.01	.44	.18	.45	.48	.01								97.6	8.2
Personal Score Age 16	12	.37	-.03	-.06	.54	.11	.23	.56	.61	.63	.02	.63							89.3	8.5
Total Score Age 16	13	.21	.06	-.15	.41	.03	.34	.35	.51	.65	.27	.85	.87						242.9	17.4
Mental Score Age 17	14	.22	-.27	.18	.47	.07	.33	.49	.51	.31	.05	.20	.57	.44					10.7	2.0
Physical Score Age 17	15	.37	-.12	-.18	.31	.03	.21	.31	.31	.42	.26	.30	.64	.53	.59				45.3	6.5
Social Score Age 17	16	.34	.00	.00	.18	-.14	.51	.10	.27	.26	-.13	.69	.35	.47	.25	.11			97.8	11.4
Personal Score Age 17	17	.29	-.05	-.38	.44	-.07	.45	.53	.54	.56	.05	.50	.81	.73	.69	.66	.46		89.8	12.3
Total Score Age 17	18	.40	-.06	-.23	.32	.10	.50	.43	.56	.40	.05	.58	.76	.70	.62	.64	.67	.90	245.3	24.9

Correlations for High Social Status on 18 Items	6 / N = 22	IQ	Social	Maturation	Mental 15	Physical 15	Social 15	Personal 15	Total 15	Mental 16	Physical 16	Social 16	Personal 16	Total 16	Mental 17	Physical 17	Social 17	Personal 17	Means for the 18 Items Given	Standard Deviations for the 18 Items Given
	N = 22	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17		
Estimated IQ	1																		113.0	11.0
Social Status	2	-.13																	62.7	7.9
Maturation Age (Months)	3	-.10	.01																159.0	15.1
Mental Score Age 15	4	-.26	-.03	-.07															12.0	1.8
Physical Score Age 15	5	-.68	-.06	-.14	.04														51.5	6.3
Social Score Age 15	6	-.25	.10	-.21	.26	.46													107.8	10.0
Personal Score Age 15	7	-.06	-.06	-.14	.29	.47	.72												101.5	10.5
Total Score Age 15	8	-.29	-.01	-.20	.33	.68	.90	.91											272.8	23.4
Mental Score Age 16	9	.30	-.14	.13	.74	.02	-.19	.00	-.02										11.9	1.6
Physical Score Age 16	10	-.51	.31	-.00	-.15	.51	.09	-.16	.09	-.07									51.1	7.1
Social Score Age 16	11	-.16	.21	-.06	.28	.04	.51	.24	.36	-.02	.31								104.0	6.2
Personal Score Age 16	12	.17	.14	.05	.34	.20	.25	.51	.42	.32	.29	.50							99.4	6.6
Total Score Age 16	13	-.18	.25	-.05	.28	.36	.35	.25	.38	.20	.72	.73	.79						266.8	15.6
Mental Score Age 17	14	.41	-.31	.10	.32	-.15	-.13	.09	-.03	.38	-.50	-.38	.04	-.35					11.3	1.6
Physical Score Age 17	15	-.47	.10	-.04	.32	.71	.24	.17	.39	.20	.47	.15	.24	.42	-.14				53.1	5.8
Social Score Age 17	16	.20	.08	-.53	-.01	.21	.18	.02	.14	-.06	.13	.19	-.02	.11	-.12	.15			109.2	4.6
Personal Score Age 17	17	.49	-.15	-.17	.47	.10	.11	.32	.25	.48	.10	.21	.68	.49	.34	.11	.04		100.0	8.1
Total Score Age 17	18	.04	-.06	-.32	.50	.47	.24	.31	.41	.44	.27	.34	.56	.53	.24	.59	.46	.77	273.5	12.2

Correlations for Low Social Status on 18 Items	N = 34	1 IQ	2 Social	3 Maturation	4 Mental	5 Physical 15	6 Social 15	7 Personal 15	8 Total 15	9 Mental 16	10 Physical 16	11 Social 16	12 Personal 16	13 Total 16	14 Mental 17	15 Physical 17	16 Social 17	17 Personal 17	Means for the 18 Items Given	Standard Deviations for the 18 Items Given
Estimated IQ	1																		106.8	8.6
Social Status	2	-.02																	42.7	1.4
Maturation Age (Months)	3	-.24	.03																169.1	19.2
Mental Score Age 15	4	-.10	.22	.17															11.0	1.7
Physical Score Age 15	5	-.13	.16	.07	.36														49.1	6.4
Social Score Age 15	6	-.06	.26	-.20	.31	.28													104.3	8.5
Personal Score Age 15	7	-.12	.31	.15	.46	.54	.33												99.0	9.3
Total Score Age 15	8	-.13	.33	.02	.57	.73	.70	.84											263.0	19.5
Mental Score Age 16	9	.27	-.03	.16	.38	.21	-.16	.17	.15										11.2	1.7
Physical Score Age 16	10	-.11	.31	.01	.24	.68	.27	.49	.59	.24									48.7	6.5
Social Score Age 16	11	.03	-.14	-.17	.09	.19	.29	.21	.32	.22	.33								105.0	7.3
Personal Score Age 16	12	.15	-.14	.08	.13	.02	.03	.40	.24	.34	.20	.70							99.5	9.8
Total Score Age 16	13	.05	-.01	-.01	.21	.32	.22	.48	.46	.40	.58	.86	.86						263.9	19.5
Mental Score Age 17	14	.10	-.07	.16	-.04	.03	-.23	.02	-.10	.24	.19	-.03	.04	.09					11.0	1.8
Physical Score Age 17	15	.03	.13	-.13	-.04	.59	.08	.30	.35	.04	.61	.14	.10	.29	.18				50.4	8.2
Social Score Age 17	16	.02	-.12	-.03	.01	.07	.27	.38	.31	-.09	.31	.56	.56	.60	.26	.19			105.0	7.7
Personal Score Age 17	17	.07	-.12	.09	.24	.13	.05	.59	.36	.31	.25	.34	.70	.60	.16	.26	.63		100.8	9.7
Total Score Age 17	18	.06	-.05	.01	.15	.35	.14	.57	.45	.19	.51	.42	.56	.63	.35	.63	.77	.85	266.6	19.8

Correlations for Early Maturers on 18 Items	N = 33	IQ	Social	Maturation	Mental 15	Physical 15	Social 15	Personal 15	Total 15	Mental 16	Physical 16	Social 16	Personal 16	Total 16	Mental 17	Physical 17	Social 17	Personal 17	Means for the 18 Items Given	Standard Deviations for the 18 Items Given
	8																			
	N	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17		
Estimated IQ	1																		112.1	8.6
Social Status	2	.63																	51.0	7.8
Maturation Age (Months)	3	.20	.35																146.9	12.2
Mental Score Age 15	4	.33	.30	.20															11.2	2.0
Physical Score Age 15	5	-.12	-.17	-.24	.25														48.9	8.1
Social Score Age 15	6	-.03	-.04	-.42	.24	.69													106.5	9.3
Personal Score Age 15	7	-.05	.06	-.21	.47	.44	.64												99.3	11.2
Total Score Age 15	8	-.03	-.02	-.31	.48	.78	.88	.86											265.2	25.9
Mental Score Age 16	9	.35	.36	.42	.62	-.27	-.06	.23	.04										11.2	1.8
Physical Score Age 16	10	-.20	-.06	-.03	.25	.63	.33	.18	.41	.04									50.2	7.6
Social Score Age 16	11	-.11	-.05	-.14	.35	.28	.53	.62	.59	.38	.42								106.0	8.0
Personal Score Age 16	12	.12	.07	.07	.48	.17	.33	.66	.50	.48	.28	.74							97.6	11.7
Total Score Age 16	13	-.01	.03	-.00	.51	.40	.47	.62	.61	.46	.65	.87	.88						264.9	23.4
Mental Score Age 17	14	.26	.24	-.01	.35	-.14	.00	.38	.15	.36	-.05	.25	.53	.35					11.1	1.7
Physical Score Age 17	15	-.18	-.12	-.29	.00	.46	.26	.24	.34	-.16	.59	.28	.18	.39	.18				51.8	5.0
Social Score Age 17	16	.18	.02	-.25	.33	.39	.49	.46	.53	.22	.32	.51	.39	.52	.27	.42			105.4	8.1
Personal Score Age 17	17	.24	.05	-.01	.53	.28	.25	.51	.45	.45	.33	.52	.78	.74	.49	.23	.49		99.8	10.4
Total Score Age 17	18	.17	.05	-.18	.47	.43	.39	.56	.56	.34	.48	.59	.67	.75	.52	.59	.80	.85	267.8	19.1

Correlations for Late Maturers on 18 Items	N = 23	1 IQ	2 Social	3 Maturation	4 Mental 15	5 Physical 15	6 Social 15	7 Personal 15	8 Total 15	9 Mental 16	10 Physical 16	11 Social 16	12 Personal 16	13 Total 16	14 Mental 17	15 Physical 17	16 Social 17	17 Personal 17	Means for the 18 Items Given	Standard Deviations for the 18 Items Given
Estimated IQ	1																		109.9	9.2
Social Status	2	.03																	47.9	4.2
Maturation Age (Months)	3	-.52	-.09																189.9	8.4
Mental Score Age 15	4	.14	-.18	.23															11.0	1.4
Physical Score Age 15	5	.17	.35	.03	.17														48.8	6.5
Social Score Age 15	6	.24	.31	-.13	.38	.33													103.7	7.5
Personal Score Age 15	7	.50	.32	.08	.38	.46	.60												99.0	10.3
Total Score Age 15	8	.38	.37	.05	.47	.67	.80	.91											262.2	20.0
Mental Score Age 16	9	.38	-.03	.30	.42	.34	.17	.44	.42										11.3	1.7
Physical Score Age 16	10	.08	.35	-.06	.04	.70	.33	.40	.52	.13									49.4	9.1
Social Score Age 16	11	.14	.20	.22	.21	.56	.45	.48	.61	.41	.48								105.5	8.0
Personal Score Age 16	12	.37	.16	.12	.24	.51	.36	.63	.63	.54	.52	.80							99.3	10.9
Total Score Age 16	13	.28	.22	.09	.23	.67	.44	.61	.69	.50	.75	.87	.93						265.0	24.8
Mental Score Age 17	14	.30	-.30	.14	.45	.27	-.10	.27	.22	.51	.22	.22	.36	.36					11.3	1.4
Physical Score Age 17	15	.35	.45	.00	.23	.62	.29	.56	.59	.66	.46	.43	.52	.59	.47				49.4	9.4
Social Score Age 17	16	.27	.01	.01	.15	.07	.22	.32	.30	.45	.15	.49	.50	.49	.17	.26			106.2	8.3
Personal Score Age 17	17	.48	.13	.05	.25	.38	.36	.71	.65	.62	.34	.48	.73	.65	.55	.67	.61		99.8	12.3
Total Score Age 17	18	.46	.22	.03	.29	.45	.35	.67	.64	.71	.40	.56	.72	.71	.54	.80	.71	.94	266.8	25.9

Correlations for 21 with High IQ Scores on 18 Items	10 / N = 21	IQ	Social	Maturation	Mental 15	Physical 15	Social 15	Personal 15	Total 15	Mental 16	Physical 16	Social 16	Personal 16	Total 16	Mental 17	Physical 17	Social 17	Personal 17	Means for the 18 Items Given	Standard Deviations for the 18 Items Given
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17		
Estimated IQ	1																		123.1	3.8
Social Status	2	.42																	51.6	9.2
Maturation Age	3	.34	-.19																163.4	16.3
Mental Score	4	.12	.63	-.09															11.6	1.5
Physical Score	5	-.24	-.10	-.33	.05														47.2	6.1
Social Score	6	-.01	.06	-.23	.24	.46													105.3	8.9
Personal Score	7	-.07	.03	.01	.41	.49	.79												99.9	8.9
Total Score	8	-.10	.06	-.22	.38	.68	.90	.93											263.8	20.7
Mental Score	9	.18	.37	.15	.52	.12	-.05	.17	.11										12.0	1.5
Physical Sc Score	10	-.14	.19	-.21	.32	.54	.34	.42	.51	.30									47.9	8.2
Social Score	11	.06	.05	-.14	.27	.24	.41	.40	.42	.42	.67								105.0	6.4
Personal Score	12	.24	-.02	.00	.19	.22	.43	.47	.46	.13	.58	.65							100.2	8.2
Total Score	13	.07	.15	-.16	.35	.43	.50	.54	.58	.36	.88	.85	.84						265.2	20.8
Mental Score	14	-.20	.16	.06	.26	.10	-.01	.39	.22	.36	.01	.10	.02	.06					11.3	1.6
Physical Score	15	-.22	-.05	-.07	.10	.51	.11	.13	.25	.12	.36	.09	.04	.20	-.26				51.0	5.3
Social Score	16	-.08	-.09	-.36	.33	.23	.34	.38	.40	.27	.12	.40	.22	.33	.37	-.12			105.7	5.4
Personal Score	17	.04	.24	-.36	.48	.30	.38	.55	.53	.21	.15	.25	.33	.33	.32	.08	.73		101.2	7.0
Total Score	18	-.11	.20	-.32	.53	.48	.35	.57	.58	.37	.31	.35	.26	.40	.37	.40	.74	.89	268.8	13.2

Correlations for I 9 with Low IQ Scores on 18 Items	11 / N = 19	IQ 1	Social 2	Maturation 3	Mental 15 4	Physical 15 5	Social 15 6	Personal 15 7	Total 15 8	Mental 16 9	Physical 16 10	Social 16 11	Personal 16 12	Total 16 13	Mental 17 14	Physical 17 15	Social 17 16	Personal 17 17	Means for the 18 Items Given	Standard Deviations for the 18 Items Given
Estimated IQ	1																		95.3	2.6
Social Status	2	-.56																	50.1	8.7
Maturation Age	3	.11	-.34																170.0	15.2
Mental Score	4	.32	.10	.14															10.2	2.5
Physical Score	5	.35	.30	-.36	.51														52.0	6.7
Social Sc Score	6	.25	.14	-.35	.71	.55													106.7	10.3
Personal Score	7	.44	-.09	.25	.48	.44	.36												97.7	12.6
Total Score	8	.44	.10	-.10	.76	.76	.80	.81											266.6	25.4
Mental Score	9	.25	.18	-.15	-.00	.32	-.07	-.07	.02										11.1	2.1
Physical Score	10	-.30	.57	-.26	-.01	.40	.13	.03	.17	.24									52.4	7.0
Social Score	11	.04	.04	-.32	.21	.32	.52	-.12	.26	.15	.33								105.3	7.7
Personal Score	12	.16	-.13	.17	.09	.13	-.03	.21	.14	-.10	-.16	-.10							97.1	18.8
Total Score	13	.04	.23	-.15	.18	.48	.35	.15	.36	.45	.65	.79	-.11						265.9	20.6
Mental Score	14	.29	-.13	.33	.33	.18	.33	.36	.33	.01	.25	-.34	.45	.33					10.6	1.9
Physical Score	15	.29	.20	-.41	.26	.79	.33	.41	.57	.40	.58	.43	.08	.64	.31				51.8	9.1
Social Score	16	.03	.14	-.07	.46	.41	.59	.18	.48	.19	.49	.79	-.04	.78	.29	.47			106.5	11.0
Personal Score	17	.43	-.08	.02	.38	.44	.43	.46	.55	.46	.30	.57	.02	.75	.65	.64	.72		96.8	11.0
Total Score	18	.31	.10	-.14	.47	.63	.55	.41	.64	.42	.49	.68	.05	.82	.54	.78	.85	.93	265.2	27.7

Correlations for 55 Drop-Outs on 8 Items	12 / N = 55	IQ	Social	Maturation	Mental 15	Physical 15	Social 15	Personal 15	Means for the 8 Items Given	Standard Deviations for the 8 Items Given
	N =	1	2	3	4	5	6	7		
Estimated IQ	1								105.5	7.4
Social Status	2	.41							48.0	6.4
Maturation Age(Mos)	3	-.05	-.23						157.3	16.0
Mental Score Age 15	4	-.07	.05	-.22					10.4	2.4
Physical Score Age 15	5	.07	.21	-.17	.44				50.0	8.0
Social Score Age 15	6	-.13	.17	-.29	.50	.59			107.4	9.5
Personal Score Age 15	7	-.14	.12	-.12	.56	.45	.59		98.2	11.1
Total Score Age 15	8	-.05	.18	-.25	.69	.76	.85	.79	266.9	25.8

13. Means, Standard Deviations, Totals and Sample Populations of Girl Drop-Outs, Late Maturers and Early Maturers

Girls	Early Maturing			Girls Late Maturing			Girls Drop-Outs		
Item	M	S.D.	T	M	S.D.	T	M	S.D.	T
Estimated IQ	110.2	7.6	2098	112.0	9.9	1564	104.9	6.5	4086
Social Status	48.8	5.2	929	44.0	2.6	685.5	48.1	5.5	1877
Maturation Age (Months)	140.1	6.8	2664	186.5	9.0	2616	151	12.1	5892
Mental Score Age 15	11.0	1.7	210	11.0	1.3	154	10.3	2.1	404
Physical Score Age 15	50.3	7.4	956	49.4	7.4	693	49.7	8.1	1942
Social Score Age 15	113.5	9.7	2058	105.2	7.7	1472	108.8	8.4	4245
Personal Score Age 15	101.5	8.9	1930	101.0	10.1	1415	98.9	10.5	3860
Total Score Age 15	270.2	19.6	5143	267.5	22.4	3723	264.4	23.5	10492
Mental Score Age 16	10.7	1.9	204	11.1	2.0	156	N = 39		
Physical Score Age 16	50.1	7.9	953	50.6	10.2	704			
Social Score Age 16	107.2	6.8	2041	105.8	9.4	1486			
Personal Score Age 16	97.0	11.7	1841	94.6	12.9	1347			
Total Score Age 16	264.1	23.3	5024	266.8	29.4	3748			
Mental Score Age 17	11.1	1.9	210	11.3	1.4	159			
Physical Score Age 17	52.0	5.2	998	51.3	9.7	719			
Social Score Age 17	106.8	7.3	2033	107.5	8.3	1507			
Personal Score Age 17	99.1	11.3	1887	101.5	13.8	1423			
Total Score Age 17	270.0	18.7	5128	273.0	28.2	3813			
	N = 19			N = 14					

14. Means, Standard Deviations, Totals and Sample Populations of Boy Drop-Outs, Late Maturers and Early Maturers

Boys Early Maturing				Boys Late Maturing			Boys Drop-Outs		
Item	M	S.D.	T	M	S.D.	T	M	S.D.	T
Estimated IQ	113.0	8.5	1473	108.1	9.0	1081	107.1	9.2	1716
Social Status	53.1	7.7	691	47.7	2.2	477	47.5	8.1	761
Maturation Age (Months)	153.4	6.9	1992	194.4	4.8	1944	172.3	14.0	2760
Mental Score Age 15	11.2	2.4	146	11.3	1.6	113	10.6	2.4	160
Physical Score Age 15	47.5	8.4	619	46.7	5.5	467	50.4	7.8	803
Social Score Age 15	105.3	9.2	1370	100.0	7.6	1000	104.0	10.9	1663
Personal Score Age 15	96.7	13.7	1257	95.2	9.5	952	96.3	13.6	1541
Total Score Age 15	260.5	30.8	3383	253.3	16.1	2533	262.0	25.3	4187
Mental Score Age 16	11.5	1.3	150	11.7	1.2	117	N = 16		
Physical Score Age 16	51.0	6.8	663	46.5	7.2	465			
Social Score Age 16	104.4	9.2	1359	104.0	5.3	1040			
Personal Score Age 16	98.2	3.8	1279	98.6	6.5	986			
Total Score Age 16	266.1	25.6	3461	259.8	9.3	2598			
Mental Score Age 17	10.9	1.4	143	11.2	1.3	112			
Physical Score Age 17	51.0	4.7	664	46.4	7.4	469			
Social Score Age 17	101.5	9.0	1341	104.0	7.4	1040			
Personal Score Age 17	100.5	9.3	1307	97.1	8.5	971			
Total Score Age 17	264.0	17.9	3448	258.7	18.2	2587			
	N = 13			N = 10					

APPENDIX III

SUPPLEMENTARY FINDINGS

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SUPPLEMENTARY FINDINGS

PROBLEM

During the preparation of the present thesis, information was gathered which was not directly related to the study. Since this information was related to adolescents, it is presented here to shed light on adolescent behavior. The information gathered and presented is related to four areas: intelligence, age of maturation, socio-economic status, and sex differences. The relationships existing between these four factors will be presented in this appendix.

READINGS RELATED TO THE SUPPLEMENTARY FINDINGS

Some readings related to adolescents and relevant to this part of the study will be presented in the next few paragraphs. The first of this supplementary data is related to sex differences and intelligence. Since girls are more conforming than boys during early adolescence, according to Gordon (1962, p. 303), it is thought that they would be able to do the school oriented intelligence tests better than boys because at this age they conform to school better. This idea is supported by Ausbel (1954) who stated that, "girls show a slight superiority over boys

in general intelligence during adolescence . . . [p. 280]." However, Janke and Havighurst (1945, pp. 499-509) found that no significant differences in intelligence were noted in a study, carried out in a mid-western community, which included all the available sixteen-year-olds.

The second set of data is related to intelligence and socio-economic status. Janke and Havighurst (1945) found that boys and girls from families of higher social status "tended to do better on all tests . . . than boys and girls of lower social positions [pp. 499-509]." Two studies carried out at the University of Alberta by Elley (1961) and West (1962) have emphasized the differences of intelligence scores for people of different cultural and economic backgrounds. Jersild (1957) summarized these results from numerous studies:

> It has been noted in many studies that there are differences in the average scores that persons of different social classes earn on tests of mental ability, with the upper groups showing higher and the lower groups showing lower average scores [p. 226].

Data has been gathered related to the maturation age of the adolescents. The two relationships which appear to be related to maturation age are intelligence and socio-economic status. Jersild (1957) stated:

> . . . children who had attained puberty at an earlier age tended, from early childhood, to have somewhat higher intelligence test scores on the average than those who were late maturing [p. 226].

Cole (1960) stated that "the age of maturity is influenced . . . by . . . socio-economic status"; this, "being operative presumably through differences in nutrition at different economic levels [p. 71]."

THE RELATIONSHIP OF PERTINENT READINGS TO THE SUPPLEMENTARY FINDINGS

From the readings mentioned in the preceding section, certain relationships appear to exist among the four factors related to adolescent behavior.

1. Girls are superior to boys in intelligence.

2. Adolescents from a more favorable social background are superior in intelligence.

3. Adolescents who mature early are superior in intelligence.

4. Adolescents from a more favorable social background mature earlier.

THE HYPOTHESIS

The postulates developed from the study of the pertinent literature produce the following hypothesis:

Relationships exist between the different areas related to adolescent behavior.

The relationships would probably be similar to the following list:

1. Intelligence is related to sex differences.

2. Intelligence is related to social status.

3. Intelligence is related to maturation age.

4. Maturation is related to social status.

DATA RELATED TO THE SUPPLEMENTARY FINDINGS

The data collected, which are related to the above hypothesis, are given below. Means, standard deviations, and significance of differences of means are shown. Asterisks (*) indicate that the .05 level of significance was reached.

A Comparison of Different Mean Scores for Groups of Continuands at Age 15

Groups Being Compared	Scores Being Compared		
	Mean		S.D.
Intelligence of Boys and Girls:			
59 Boys	108.9		8.8
71 Girls	108.7		9.2
Intelligence and Social Status:			
20 of High Social Status	113.0		11.0
34 of Low Social Status	106.8	*	8.6
Intelligence and Maturation:			
33 Early Maturers	112.1		8.6
23 Late Maturers	109.9		9.2
Social Status and Maturation:			
33 Early Maturers	41.0		7.8
23 Late Maturers	47.9		4.2

CONCLUSIONS

The conclusion drawn from the data is:

Some relationships exist between different areas which affect adolescent behavior.

This can be broken down into four parts:

1. Intelligence is not related to sex differences.

2. Intelligence is related to social background.

3. Intelligence is not related to maturation age.

4. Maturation age is not related to social status.

COMMENTS

Comments related to the four parts of the conclusion are given below.

1. Since there is no real agreement existing in the pertinent literature that girls have superior intelligence to boys, it is not surprising that no significant difference was found.

2. As predicted, there was a significant difference between social status and intelligence. This is what was expected because most research supports this idea.

3. Even though the samples used to compare intelligence and maturation age were quite small, the means went in the direction forecast, but did not reach significance. Another study with larger samples may show that the relationship is significant. A relationship may exist between intelligence and maturation age.

4. Since the reason given in the literature for maturation age being related to socio-economic status is a difference in nutrition, there would not seem to be a great deal of difference in the sample studied.

In the opinion of the writer, no great difference in nutrition exists in the sample studied, since most of the people came from fairly stable homes with the father regularly employed.

APPENDIX IV

DEFINITIONS OF TERMS USED IN THIS STUDY

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A number of terms are used in this study in rather specialized ways. These special meanings are given.

Self-concept is the picture presented of an individual according to his responses to the items on the Taschuk-Hepburn Inventory of Self.

Total Self-Score is the score on the entire Taschuk-Hepburn Inventory of Self for an individual. According to the definition of self-concept, the two terms are the same.

High self-concept of fifteen-year-old students is shown by anyone who had a total score of 290 or more on the Taschuk-Hepburn Inventory of Self. This would be a favorable self-concept and it would indicate a fairly high degree of adjustment. (The number 290 was chosen because it represents a score one standard deviation above the mean.)

Low self-concept of fifteen-year-old students is shown by anyone who had a total score of 243 or less on the Taschuk-Hepburn Inventory of Self. This would be an unfavorable self-concept and it would indicate a fairly low degree of adjustment. (The number 243 was chosen because it represents a number one standard deviation below the mean.)

Area self-score is the score of an individual on any of the five areas on the Taschuk-Hepburn Inventory of Self. The areas are mental, physical, social, personal, and total.

Intelligence is the estimated intelligence quotient from cumulative records for each individual. For most cases this was an average of the results of the group tests given while the individual was attending school in Edmonton.

High Intelligence is the average IQ score of any student above 118. (The number 118 represents a score of one standard deviation above the mean.)

Low Intelligence is the average IQ score of any student below 100. (The number 100 represents a score of one standard deviation below the mean.)

Social status is the score for each individual on the Blishen (1958, pp. 519-531) Canadian Occupational Scale. The range of the scale is from a high score of 90 to a low score of 32.

High Social Status is shown by anyone who scored 57 or more on the Blishen Scale (1958, pp. 519-531).

Low Social Status is shown by anyone who scored 45 or less on the Blishen Scale (1958, pp. 519-531).

Age of maturation is the age at which the greatest spurt in height and weight was shown on the individual's health report on the cumulative record.

Early maturers are the individuals for whom early growth spurts were recorded. These were girls who had a growth spurt at age 12 or less and boys who had a growth spurt at age 13 or less.

Late maturers are the individuals for whom late growth spurts were recorded. These were girls who had a growth spurt at age 15 or more and boys who had a growth spurt at age 16 or more.

Continuands are the people who took part in the study in grade ten and continued in the study through to grade twelve. All the continuands in the study were age fifteen in the autumn of 1958, when the study began.