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### Self-Concepts of Christian and Public High School Seniors

Dorothy Potts Lee  
*Old Dominion University*

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SELF-CONCEPTS OF CHRISTIAN  
AND PUBLIC HIGH SCHOOL SENIORS

by

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A Dissertation Submitted to the Faculty of  
Old Dominion University in Partial Fulfillment  
of the Requirements for the Degree of

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1988

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## ABSTRACT

### SELF-CONCEPTS OF CHRISTIAN AND PUBLIC HIGH SCHOOL SENIORS

Dorothy Potts Lee  
Old Dominion University, 1988  
Advisor: Dr. David I. Joyner

This ex post facto study compared the self-concepts of seniors from three Christian high schools in southeastern Virginia with three public high schools located in the same cities. One intact classroom from each school was employed, making a total of 147 subjects.

A one-way multivariate analysis of covariance (MANCOVA) was conducted to maximize the power of discrimination of the Tennessee Self-Concept Scale (TSCS) by predicting the best linear combination of dependent variables after statistically adjusting for covariates. Performance on five of the subscales was judged not to be related to potential differences between the two types of schools and those five scales were used as covariates to control for potential differences between the two groups. A stepwise regression analysis was performed as an additional check on the data. The results were redundant to those obtained with the MANCOVA.

Based on the data analysis, there was support for the hypothesis that Christian school seniors score higher than public school seniors on the three dependent variables associated with the self-concept of respondents as measured by the TSCS: Moral-Ethical Self score, Behavior score, and Self-Satisfaction score, after adjusting for the covariates

score, and Self-Satisfaction score, after adjusting for the covariates (Identity score, Physical Self score, Personal Self score, Family Self score, and Social Self score). However, the difference between the two groups on the Self-Satisfaction score was not great enough to be statistically significant. The difference between the Christian and the public groups on the Moral-Ethical Self subscale was significant at the .01 level. The Behavior scale difference was significant at the .05 level. Therefore, it can be concluded that, as measured by the TSCS, the Moral-Ethical category is the most powerful differentiator between the two groups. The Behavior subscale also discriminates between the public and Christian school groups, but at a lesser level. The theoretical implications of these differences are discussed in the literature review and the interpretation of results.

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Dr. David I. Joyner has served as the chairperson of my dissertation committee, and his encouragement and guidance have been a great source of support while conducting this study. He took time to not only know me as an advisee, but also as a person.

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I am grateful to those public and Christian school educators whose cooperation and guidance made this research project feasible.

Also, to the 147 high school seniors, I give my thanks for their willingness to participate.

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## CHAPTER I

### INTRODUCTION

In recent years self-concept has become an important means of understanding and studying human behavior. William H. Fitts, the author of the Tennessee Self-Concept Scale (the research instrument used in this study), spent several decades in self-concept research. He speaks of the self-concept as a valuable independent variable in the prediction of human behavior, suggesting that we will have learned much about predicting future behavior by being able to more accurately assess the present self-concept, how it develops and changes, and how it relates to other behavior. Fitts, in his monograph entitled The Self-Concept and Self-Actualization, provided evidence to support the idea that an individual with a positive self-concept can reach a stage of self-actualization easier than can a person with a negative self-concept.<sup>1</sup>

Since it is a goal of Christian education to enable students to reach their total potential as individuals,<sup>2</sup> it is important, then, for Christian schools to be concerned with the self-concepts of their students. It seems highly desirable that both Christian schools and public schools realize the status of their students in regard to their self-concepts so that appropriate goals may then be set and programs instituted to guide and assist the students toward self-actualization and more rewarding, productive lives.

### Historical Trends in Education

Education has long been viewed as crucial to American society—so crucial that early homesteading laws enticed settlers by providing free land on which to build schools. Because schooling was perceived as the key to the success of individuals and to the excellence of society, states began passing laws in the mid-1800s to require school attendance until the minimum age of 16.<sup>3</sup> Americans then and now expect their schools to prepare their youths to become productive members of society.

The maxim that has been and continues to be the guiding light of contemporary education is to "educate the whole child." Historically, educators have had four kinds of goals: (1) academic, (2) vocational, (3) social and civic, and (4) personal, including self-concept development.<sup>4</sup> Evidence of these four goals can be found in such earlier works as Cardinal Principles of Secondary Education<sup>5</sup> and The Purposes of Education in American Democracy.<sup>6</sup> Recently, identical goals have surfaced in apparent attempts to synthesize the views of various educational constituencies.<sup>7</sup> However, one important goal has been negated in the above works. The spiritual element has not been considered. Kienel (1978) edited The Philosophy of Christian School Education which deals with the spiritual dimension of education. He postulates that in order to educate the whole child the spiritual goal of Christian education must be a first priority.<sup>8</sup>

Throughout history social and economic conditions have influenced the degree of emphasis on educational goals. During particular periods, certain goals have received precedence over others.

The focus shifted to social and personal goals in the 1930s; in the 1960s, after Sputnik, it returned to an academic focus. Following this period, a re-emphasis on personal and social goals appeared as a result of the rise of the "humanistic" movement.<sup>9</sup>

Humanistic education was prominent for over two decades but has been replaced by the current interest in back-to-basics and competency testing.<sup>10</sup> Some educators disagree with this focus. They maintain that the public still prefers educational institutions to be concerned with the personal and social development of students. Christian school educators protest the materialistic philosophies of humanistic education and stress a God-centered academic focus.<sup>11</sup>

The 1980s have witnessed a proliferation of state and national reports on education which have extolled the virtues of more stringent academic policies. Longer school days and school years, more homework, fewer electives, stiffer graduation requirements, and higher college entrance standards led the lists of reforms proposed by individual critics, blue-ribbon panels, and government commissions.<sup>12</sup> A national commission warned that America's survival would be at risk unless state legislatures began to insist on quantifiable standards and demonstrable competencies.<sup>13</sup>

A recent survey of teachers and administrators revealed that the development of a positive self-concept on the part of students is still a primary goal.<sup>14</sup> A similar survey of teachers and parents rated the prominence of the previously mentioned four broad goals and indicated which should be emphasized in schools. All four were seen as important, with personal goals ranking second only to intellectual ones in

terms of needed emphasis.<sup>15</sup> As a result of the writings of self-theorists, from William James<sup>16</sup> through Combs and Snygg,<sup>17</sup> Rogers,<sup>18</sup> Rosenberg,<sup>19</sup> Coopersmith,<sup>20</sup> Fitts,<sup>21</sup> and others, educators have become increasingly aware of the student's self-concept as a variable in the educational process.

The self-concept has become a widespread and significant means of interpreting human behavior. The person's self-concept appears to influence behavior, general personality, and mental health. Persons who have clear, consistent, positive, and realistic concepts of themselves will usually act in healthy, confident, and self-respecting ways.<sup>22</sup> Such people have less to prove to others; they are less threatened by difficult tasks, people, and situations; they relate to and work with others more comfortably and effectively; and their perceptions of reality are less likely to be distorted.<sup>23</sup> It was from this theoretical background that Fitts formulated a general prediction: "Between persons of equal ability, the one with the more optimal, or the healthier, self-concept will generally function better."<sup>24</sup>

During the evolution of the Christian school movement in America, the concern for the uniqueness of each child has often been stated. Roy Lowrie, a pioneer in the Christian school movement, has quoted Thoreau in an attempt to explain this uniqueness:

If a man does not keep pace with his companions, perhaps it is because he hears a different drummer . . . . The Christian school is an illustration of this thesis. We are a protest school in the educational world. We have broken pace, not with the level of academic work, but with the philosophy of life which is taught in other schools, private as well as public.

Our philosophy is based upon the Bible. And we can pray and teach the Bible (1) as a subject in each grade, (2) in harmony with the academic subjects, (3) in the development of character, and in

counseling and guidance. We are not indifferent toward God and His Word.

We do not keep pace with the philosophy of life which is taught by our educational companions. We teach our students to march out of step with the world's cadence. Our ears are tuned to a different drummer. His drum beat is growing louder, for the difference between the Christian and the public school is rapidly becoming clearer.<sup>25</sup>

Since Christian education is based on the moral-ethical precepts of the Bible, it seems likely that Christian school students will score higher in those areas of self-concept that describe the self from a moral-ethical frame of reference, such as moral worth, relationship to God, feeling of being a "good" or "bad" person, and satisfaction with one's religion or lack of it. Furthermore, it also seems probable that Christian school students who have supposedly received extensive training in character development will tend to engage in more acceptable behavior and, thus, because of the resulting increased level of social acceptance will likely also experience greater self-satisfaction.

#### Statement of the Problem

What are the differences concerning the self-concept of seniors from reporting public high schools and the seniors from reporting Christian high schools as determined by the Tennessee Self-Concept Scale (TSCS)?

The hypothesis of the study is:

H<sub>1</sub> There will be a significant difference between Christian high school and public high school students in regard to the self-concept as measured by the TSCS. Specifically, on the "Self-Satisfaction," "Behavior," and "Moral-Ethical Self" scales of the TSCS, the seniors of Christian high schools will have significantly higher

scores as compared to the seniors of public high schools.

### Research Design and Instrumentation

An ex post facto design was employed because the study's classification variable was the type of high school and the manifestations of the student's respective education had already occurred.<sup>26</sup> Thus, this was a systematic, empirical inquiry in which no variables were manipulated. The independent variable was the type of high school (public or Christian) and the dependent variables were the "Self-Satisfaction" score, the "Behavior" score, and the "Moral-Ethical Self" score as measured by the Tennessee Self-Concept Scale (TSCS). The data were analyzed by using a one-way multivariate analysis of covariance (MANCOVA) to test whether the three dependent variables associated with the self-concept of respondents (Self-Satisfaction score, Behavior score, and Moral-Ethical Self score of the TSCS) varied as a function of the type of school. That is, were there significant differences between the two types of schools for the three dependent variables after adjusting for the covariates (Physical Self score, Personal Self score, Family Self score, Social Self score, and Identity score)?

The researcher selected the Self-Satisfaction, Behavior, and Moral-Ethical Self subscales as the three dependent variables because they seemed most likely to discriminate between the two groups. The remaining five subscales were chosen as covariates because the researcher predicted that the two groups would be similar on these measures. In essence, the covariates were used to statistically match the independent variable groups, thereby reducing prior differences by equating all subjects on covariate scores.



Robinson and Shaver listed the Tennessee Self-Concept Scale (TSCS) as the most effective instrument for measuring an individual's self-concept. In their examination of 61 scales that measure self-concept, they perceived the TSCS as the foremost measuring instrument in overall quality.<sup>27</sup>

The TSCS is an objective Likert-type self-report instrument developed from a clinical mental health perspective.<sup>28</sup> It measures self-concept across many sub-areas, furnishing both an overall self-esteem score and a complex self-concept profile.<sup>29</sup>

#### Limitations of the Self-Report Method

There has been controversy over the years concerning the validity and reliability of self-report instruments. The major critics of the self-reporting method posit that even though a person's self-concept is what one believes about oneself, the self-report is merely what he or she is willing and able to reveal to someone else. Combs, Courson, and Soper<sup>30</sup> argued that these are rarely, if ever, the same. They refer to Combs and Soper<sup>31</sup> who claimed that the extent to which the self-report can be relied upon as an accurate measure of self-concept depends upon factors such as the clarity of the subject's awareness, the subject's command of adequate symbols for expression, social expectancy, the subject's cooperation, and freedom from threat.

Three additional variables which may affect self-reports are the response set, the familiarity of the item, and social desirability. Shulman<sup>32</sup> reported that there are nay-sayers and yea-sayers who respond in a particular pattern regardless of the questions on the inventory. Purinton<sup>33</sup> found that changes in self-reports after repeated usage

might be associated with the student's familiarity with the items and might not necessarily reflect a change in self-concept. Heilbrun<sup>34</sup> has maintained that the social desirability of a response has an effect on the probability of endorsement on a self-report inventory.

According to Purkey's conclusions, there are numerous contaminating variables in self-reports. For the teacher, this means that conclusions about self-concept based entirely on self-reports must be taken with a grain of salt.<sup>35</sup> In spite of their weaknesses and limitations, however, self-reports do reveal significant characteristics of the self and are important to teachers. When used sensitively, they can give valuable insight into how students view themselves and their surroundings.

Rogers<sup>36</sup> has claimed that self-reports are valuable sources of information. Allport<sup>37</sup> has taken the position that persons have the right to be believed when they report their feelings about themselves. These authorities both believed that one should ask individuals directly if one wants to learn more about them. Sarbin and Rosenberg<sup>38</sup> concluded from their research that their self-report inventory was useful for rapidly discovering meaningful attributes, and it required minimal effort. Strong and Feder's<sup>39</sup> views summarized the above viewpoints by stating that all evaluative assertions that individuals make about themselves can be deemed to be a sample of their self-concept, from which assumptions may then be inferred concerning the various characteristics of that self-concept.

Furthermore, Shrauger and Osberg<sup>40</sup> claim that individuals possess an extensive data base from which to draw inferences about

themselves, a much larger base than even the most ambitious external evaluator is likely to develop. Not only do individuals have more data about themselves than does an evaluator, but they may also process those data in ways that may lead to greater accuracy of prediction. They further concluded that there are potential practical as well as conceptual merits in self-assessment. Self-appraisals are likely to be more economical, both in time and money, than are other assessment methods.

### Threats to the Internal Validity

The major threat to the validity of the study is whether significant differences are attributable to Christian school attendance, or are the result of uncontrolled variables, such as home or church related factors. The researcher has attempted to minimize the threat of uncontrolled variables by using five of the subscales on the Tennessee Self-Concept Scale (TSCS) in a statistical matching procedure. Thus, Christian and public school seniors were equated on the five TSCS subscales that were not thought to be related to the differences in school atmosphere. In essence, the five covariates were used to statistically match the two groups of students, thereby reducing prior differences by equating all subjects on covariate scores.

In addition, it may be suggested that if the performance of Christian to public school students is superior on the TSCS, it is due, at least in part, to the somewhat greater student selectivity in Christian high schools than in public schools. The fact that, on the average, a different sort of student attends the Christian school may need consideration. This research study used the above mentioned

statistical matching procedure as an attempt to control for student selectivity.

Another factor that would seem to be a confounding variable is the number of years in attendance in a particular school. However, after consultation with both public and Christian school educators and, also, with three research consultants, it was concluded that because this was a comparative study, it was not necessary to include this variable unless there was reason to believe that the two groups would differ on this measurement. Both groups of educators agreed that the high school population is a relatively stable one in both segments and that there is no reason to suspect that one group is different from the other in number of years in attendance. The Christian school educators suggested that a minimum of extraneous variables be used in order to maintain clarity.

Since no previous studies dealing with the self-concept of evangelical Christian school students were found, this study has limited foundational data on which to build. However, the researcher consulted numerous relevant studies in both the private and public school sectors of education to supplement the foundational research data.

Furthermore, the reluctance of some local school educators to participate in formal research placed a constraint on the size of the obtainable sample and thereby produced a sample pool that was based solely on administrative decisions. Although this reluctance was seen in both Christian and public schools, it was more prevalent in the Christian school sector.

Interviews with national and local Christian school educators revealed an ambivalence regarding research. Various national leaders strongly encouraged research efforts and suggested that a comparative study using public school groups would be beneficial; however, the local educators were reticent about the need for research. Therefore, some modifications in research procedures were necessary in order to gain access to the Christian schools. Oral communication replaced letters as a mode of corresponding. A phone call was more effective than written communication with overworked executives. Establishing the credibility of the researcher was overly important in order to counteract the reluctance of these educators to participate. A personal contact was often necessary in order to secure the needed cooperation. Most Christian school educators requested that the study be kept as straightforward as possible in order to be understandable to the Christian school community as a whole. However, the need to collect and monitor such data must be weighted against concern for experimental control and objectivity.

When samples of over 75 were used (this study had 147 subjects), William H. Fitts, the developer of the Tennessee Self-Concept Scale (TSCS), concluded that the variables of age, gender, education, intelligence, and race apparently exerted no systematic effect upon the self-concept.<sup>41</sup> Other researchers have questioned these conclusions with particular reference to the age variable. Numerous investigators, particularly those engaged in research with adolescents, have reported data from allegedly normal groups which appear to deviate significantly from the TSCS norm group described in the TSCS Manual.<sup>42</sup> To control

for the age factor, this study limited the sample to high school seniors. A review of the literature indicated that the self-concept has become fairly stable by the senior year of high school. In addition, the TSCS validation samples were highly representative of this particular age group.

It appears that the reason for this instrument having been used almost exclusively by mental health practitioners is because of its highly technical interpretations. The TSCS Manual is not easily comprehended by unqualified individuals. Therefore, the publisher has required purchasers to certify their eligibility to administer this instrument by furnishing their educational and experiential backgrounds. At least a masters degree in counseling or social work is required to purchase and/or administer the TSCS. A new TSCS Manual is currently in publication and will perhaps alter these limitations.

#### Appropriate Interpretation of Treatment Effects

According to the Christian school educators who participated in this study, there are certain spiritual functions conducted within the Christian school milieu that distinguish it from secular functions within the public school sector. It is essential that one has an understanding of what these functions are when conducting research that investigates the possible differing effect of the two types of schools. Some of these spiritual functions are as follows:

1. The Bible is the primary text of the school and forms not only the core of a class entitled "Bible," but its philosophical content undergirds all subjects taught within the Christian school. The Christian schools in this study are evangelical in nature and

purpose. That is, their philosophy posits that the soul is saved only through faith in Jesus Christ (i.e., the born-again experience), and students are encouraged to place their faith in Him.

2. All teachers are Christian and ideally present a role model that is overtly Christian in nature.

3. Prayer for students is a regular part of the school's ministry, and chapel services are conducted on a regular basis.

In order to further clarify the aforementioned spiritual functions, the terms "evangelical" and "born again" will be defined in more detail below. These terms will be used numerous times throughout this dissertation.

#### Operational Definitions

The first three terms hereinafter mentioned were defined by the Christian school educators who participated in this study.

#### Religious Terminology

Evangelical. This term pertains to those Protestant churches or schools that emphasize salvation by faith in the atonement of Jesus Christ (i.e., the born-again experience).

Born Again. This term refers to the salvation experience that takes place in individual lives when they place their faith in Jesus Christ as Saviour and Lord. This involves an act of the will--the person's attitude changes. Though one may have previously been hostile toward spiritual matters, he or she now embraces scriptural principles as contained in the Bible. His or her outlook has been changed or reborn, thus the term "born again."

Evangelical Christian High School. An evangelical Christian high school is one established by an evangelical Protestant church or other evangelical Protestant group. The program provides religious training in accord with the Christian ideal and ethic as found in the Bible, while maintaining a complete educational service in accord with the goals of American society. In large measure, these schools are supported by individual Protestant churches as well as by tuition and other offerings furnished by the patrons of the schools.<sup>43</sup> The Christian high schools involved in this study are evangelical in nature and purpose. That is, their philosophy states that the soul is saved only through faith in Jesus Christ (i.e., the born-again experience), and students are encouraged to place their faith in Him.

Public High School. A public high school is one that is organized and operated under a school district of a state. It is supported by tax revenues to provide education to any child of eligible age and residence. As a nonsectarian institution, it is administered by public officials and makes no tuition charge.<sup>44</sup>

The variables reported below were tested by employing the Tennessee Self-Concept Scale and, therefore, are defined as found in the manual for the TSCS.<sup>45</sup>

Total Self-Esteem Score. This score reflects the overall level of self-esteem. Persons with high scores tend to like themselves, feel that they are persons of value and worth, have confidence in themselves, and act accordingly. People with low scores are doubtful about their own worth, see themselves as undesirable, often feel anxious, depressed, and unhappy, and have little faith or confidence in



themselves.

Physical Self. Here the individual is presenting his or her view of his or her body, state of health, physical appearance, skills, and sexuality.

Moral-Ethical Self. This score describes the self from a moral-ethical frame of reference--moral worth, relationship to God, feeling of being a "good" or "bad" person, and satisfaction with one's religion or lack of it.

Personal Self. This score reflects a sense of personal worth, feeling of adequacy as a person and an evaluation of one's personality apart from one's body or relationship to others.

Family Self. This score reflects the individual's feelings of adequacy, worth, and value as a family member. It refers to the individual's perception of self in reference to his or her closest and most immediate circle of associates.

Social Self. This is another "self as perceived in relation to others" category, but pertains to "others" in a more general way. It reflects the person's sense of adequacy and worth in his or her social interaction with other people in general.

Identity. These are the "what I am" items. Here individuals describe their basic identity--what they are as they see themselves.

Self-Satisfaction. This score comes from those items where individuals describe how they feel about the selves they perceive. In general, this score reflects the level of self-satisfaction or self-acceptance.

Behavior. This score comes from those items that say "this is

what I do," or "this is the way I act." This score describes people's perceptions of their own behavior or the way they function.

### Importance of the Study

Educators have become more cognizant of students' self-esteem as a variable in the educational process. A recent survey of teachers and administrators revealed that the development of a positive self-concept on the part of students is a primary goal.<sup>46</sup> It is important for both public and Christian schools to become aware of the status of their students' self-concepts so that appropriate goals and programs may be instituted to guide the student toward attaining an optimal self-concept. There is evidence in the literature that persons with optimal self-concepts tend to utilize their intellectual abilities more efficiently than do those with poor self-concepts.<sup>47</sup>

### Importance to Christian School Community

To date, the evangelical Christian community has done little to investigate its successes, or lack of them. Raymond E. White, a leader in the Christian school movement, accounts for the limitation of Christian school research as follows:

Reasons for this are varied, but probably the newness of the movement is a primary explanation. Rapid expansion began following World War II. As a result, most energy was used in keeping up with the growth. There were not enough people free to do the needed investigation. Besides, it was assumed the schools were doing their job . . . .<sup>48</sup>

. . . It could be that a better way to measure the success(es) of an evangelical Christian school would be to look at the self-worth of Christian school students . . . self-worth and academic performance are concepts that can be measured with already validated instruments.<sup>49</sup>

Because of the scarcity of evangelical Christian school research

(especially in the area of self-concept) and the escalating growth of the evangelical Christian school movement, this study was designed to furnish foundational data which may serve as an impetus for further research. Its findings may have relevance to other Christian and public schools. Further research is needed to discover the interaction effect between the philosophical underpinnings and the unique environment of the Christian school milieu. If it is found that these two features of the Christian school are exerting considerable influence on the self-esteem of its population, perhaps further research will uncover specific methods that can be used successfully to raise self-worth scores. A self-esteem improvement program may not raise academic achievement, but it does preclude other tangible benefits that appear as important to the total school program as are the "basics." As Johnston, Markle, and Means (1981) state, a rich emotional life and good mental health may be the "most basic basics of all."<sup>50</sup>

Chapter Two will present a review of the literature that is pertinent to the variables upon which this study is based. The first section will examine the development of self-concept as a construct. Public and non-public education will be surveyed. The limitation of Christian school research will be noted. The final section highlights the Christian's view of self-concept.

## ENDNOTES

<sup>1</sup>William H. Fitts, The Self-Concept and Self-Actualization (Nashville: Dede Wallace Center, Monograph No. III, 1971), 1-100.

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## CHAPTER II

### SURVEY OF LITERATURE

#### Self-Concept: Historical Overview

Interest in the self, what it is and how it develops, is not a recent phenomenon. Very early in history our ancestors began to think of what we today call the self. It took on various labels, but the conception of an inner driving force which influences one's behavior seems to pervade first the folk literature and later the more formal and chronological writings across many cultures. In order to trace some of the earliest formal writings on the concept of self, contributions from several fields of study must be examined.

The religious writings of early civilization reflect the belief that humanity has some inner regulatory agent which influences one's destiny. These writings speak of a soul or an inner being which has spiritual qualities and thus is a separate entity from the material body. The Grecian philosophies provide one of the first records of a concept similar to that of the self. According to Plato (427-347 B.C.) the soul exists before birth and is the initiator of activity--conscious, lifegiving, and non-material. Following Plato, Aristotle in the third century B.C. conducted a systematic and logical inquiry into the nature of the ego.<sup>1</sup>

Augustine (354-430 A.D.) and Thomas Aquinas (1100 A.D.), both philosophers and theologians, delved deeply into the essence of the inner self.<sup>2</sup> Viney notes that Augustine in his Confessions, provided



the first glimpse of introspection into the personal self. Aquinas' writings provided extensive exposition on the question of self-knowledge.<sup>3</sup>

In 1644, the French mathematician and philosopher Rene Descartes published his Principles of Philosophy, which provided a significant turning point in determining how non-material nature would be perceived.<sup>4</sup> With Descartes pointing the way, several other philosophers of this period also expounded upon the centrality of the inner "self" in systems of cognition and consciousness. On the continent, Spinoza and Leibnitz added their ideas about the mystery of the non-physical aspects of the human race.<sup>5</sup> Meanwhile, the English philosophers, Hobbes, Locke, and Hume, all were probing the nature of the self. Hobbes advanced a code of ethics based on self-interest; Locke conceived humankind as "a thinking intelligent being, that has reason and reflection, and can consider self as itself." Hume concentrated on an examination of personal identity.<sup>6</sup>

In summarizing the writings on the self in the seventeenth and eighteenth centuries, Purkey<sup>7</sup> notes that terms such as mind, soul, psyche, and self were often used interchangeably, with scant regard for an invariant vocabulary or scientific experimentation. For the most part, a general state of confusion in regard to the concept of self existed into this present century.

At the end of the nineteenth century, as psychology evolved from philosophy as a separate entity, self as a related construct moved along with it. However, as behaviorism swept over psychological thinking during the first 40 years of this century, the self all but disappeared as a theoretical or empirical construct of any stature.<sup>8</sup>

Study of the self was not something which could easily be investigated under rigidly controlled laboratory conditions. Therefore, the subject was not considered an appropriate one for scientific pursuit.

Nonetheless, the concept was kept alive during the early part of the twentieth century by such men as Freud<sup>9</sup> and James. These two men were prominent in formulating conceptions about the self and the ego, and their early conceptualizations laid the groundwork for several of the later self theories that emerged. During the period since World War II, the concept of self has been revived and has exhibited remarkable vitality.

William James<sup>10</sup> defined the self as the sum total of all that a man can call his--his body, traits, and abilities, together with his material possessions, family, friends, enemies, vocation and avocations. Dividing the various aspects of the self into three parts, James listed: (1) the constituents of the self, namely the domains of self-evaluation, for example, the material me, the social me, and the spiritual me; (2) the feelings and emotions they arouse, such as specific forms of self-appreciation or self-dissatisfaction; and (3) the acts that they prompt, for example, self-preservation and self-seeking behavior.<sup>11</sup> Thus, for James, affects were not only reactions to one's self-evaluation, but the impetus for the behavior that followed. He considered ego the individual's sense of identity. In addition to this global concept, James saw the self as including spiritual, material, and social aspects.

Freud's writings were a significant breakthrough in humankind's quest to understand internal processes. Freud gave much attention to self-understanding, under the rubric of ego development and

functioning.<sup>12</sup>

In the late 1920s, the lines of demarcation among schools of psychological thought were being clearly drawn. Advocates of one or another of the organized schools felt compelled to disagree with the opposing ones. For instance, the Freudians emphasized unconscious motivation; the introspectionists rallied around the process of introspection as the way to explore consciousness; the gestaltists exalted the value of insight and emphasized the selective perceiver; and the behaviorists were busy discrediting the other systems of psychological thought and turned their attention almost exclusively to the study of observable behavior, claiming only this was fit for scientific inquiry. Appealing to the scientific method of studying phenomena, they espoused the strict hypothesis testing model of the natural sciences.<sup>13</sup>

American psychologists working in clinics found behavioristic models too limited to account for the phenomena observed. Operational behaviorists acknowledged complex cognitive and motivational intervening variables. Gestalt psychologists injected their phenomenological methods and theories into the stream of general psychology.<sup>14</sup>

In 1961, Ruth C. Wylie published one of the most comprehensive books dealing with self-concept entitled The Self-Concept, A Critical Survey of Pertinent Research Literature. Wylie's book contained two separate volumes, the first of which was concerned with a conceptual treatment of methodology relevant to self-concept research and an evaluation of designs, procedures, and measurement techniques. Wylie claimed that the two most common usages of "self" may be dichotomized into those which refer to "self as agent or process and those which

refer to self as object of the person's own knowledge and evaluation."<sup>15</sup> Wylie's work addresses itself to self as object.

In 1974, Wylie published a revised edition of her first volume; in 1979, a revision of the second volume appeared.<sup>16</sup> In both volumes, Wylie gave major emphasis to conscious self-concept such as emphasized by phenomenological theorists Lecky, Rogers, Snygg, and Combs. There was a great deal of writing done in the 1940s and 1950s, but little empirical work was done prior to 1949. The significance of the self-concept construct has continued to grow among researchers, psychologists, sociologists, and educators.

#### Characteristics of the Self

As used in modern psychology, "self" has come to have two distinct meanings. It is defined as the person's attitudes and feelings about himself or herself, and at the same time, it has been defined as a group of psychological processes which govern behavior and adjustment. The first may be called a "self-as-object" definition, while the second may be termed the "doer," involving the processes of thinking, remembering, and doing.<sup>17</sup>

Commenting on the relationship between the two concepts of self, Hall and Lindzey said:

The self whether it be conceived as an object or as a process or both, is not an homunculus or "man within the breast" of soul, rather it refers to the object of psychological processes or to those processes themselves, and these processes are assumed to be governed by the principle of causality. In other words, the self is not a metaphysical or religious concept; it is a concept that falls within the domain of scientific psychology.<sup>18</sup>

In contrast, Lewter claims that as the self seeks to synthesize its experiences and gives meaning to life, a spiritual dimension may, for many, become the integrating and modifying force. Lewter further

posits that humans are characterized by a search for meaning rather than a search for self; and only this spiritual core, with its search for ultimate meaning, provides wholeness and oneness.<sup>19</sup>

According to Campbell, any science of psychology is incomplete unless it takes the God-oriented motive into account. Evangelical theology maintains that when persons are "born again" through faith in Jesus Christ, they receive new natures. Dominating their lives is a new motivation, the desire to serve and glorify God. The desire for self-esteem is not dead, but it becomes dominated by the desire that the Lord be esteemed.<sup>20</sup>

Hamachek<sup>21</sup> expanded the above concepts by stating that an individual's concept of himself or herself is a very personal possession. How one views oneself is determined partially by how one perceives oneself as really being, partially through how one views oneself as ideally wanting to be, and partially through the expectations one perceives that others have for him or her. These are complex, interrelated perceptual processes, no one of which is more important than the other. Depending on the individual, each of these three perceptions contributes more or less to his or her feelings of selfhood. For some, expressing their real selves, whatever it may be, is most important, and they struggle to stay as close in tune with the harmony of that inner self as is possible. For others, striving to become that ideal self is the guiding star which gives them their sense of purpose and direction. For still others, looking to and obeying the expectations of the world around them is their most satisfying mode of self-expression.

Acquiring a self-concept involves a slow process of

differentiation as an individual gradually emerges into focus out of his or her total world of awareness and defines progressively more clearly just who and what he or she is. Jersild is probably as clear as anyone about what the self is when he explained:

The self is a composite of thoughts and feelings which constitute a person's awareness of his individual existence, his conception of who and what he is. The self includes, among other things, a system of ideas, attitudes, values, and commitments. The self is a person's total subjective environment; it is a distinctive center of experience and significance. The self constitutes a person's inner world as distinguished from the outer world consisting of all other people and things.<sup>22</sup>

An individual's self-concept is constructed from his or her perception of the kind of person he or she is. All individuals have beliefs about their relative value and ultimate worth. Everyone feels superior to some persons but inferior to others. One may or may not feel as worthy or as able as most other individuals, and a great deal of one's energy is spent attempting to maintain or modify one's beliefs about how adequate he or she is or would like to be. It is through this door of the self that an individual's personality is expressed. How the self is expressed is a complex phenomena conveyed in different ways by different people. It is one person's shyness and another's boldness; it is one person's guardedness and another's openness; it is one person's loving nature and another's vindictiveness.<sup>23</sup>

Research has shown that self-acceptance and personal happiness have much to do with accepting others and enjoying what one is and what one has, maintaining a balance between expectations and achievements.<sup>24</sup> Healthy people see themselves as liked, wanted, acceptable, able, and worthy. Not only do they believe they are individuals of dignity and worth, but they act as if they are. It is in this factor of how individuals view themselves that the most outstanding differences

between high and low self-image individuals are likely to be found.

### The Academic Self-Concept

A substantial body of empirical data exists that links both students' school achievement and behavior to their feelings about themselves. The possession of a high self-concept does not "cause" higher academic achievement, but it appears to have a relation to it.<sup>25</sup> The attitudes students have about themselves and their ability to do school work depends partly on how they have been treated by people significant to them, their perceptions of school and teacher, and their experiences with success and failure.<sup>26</sup>

Based on research findings, Fitts stated that, in the academic performance of both students and teachers, the self-concept is a better prediction of non-cognitive behavior (attitudes, morale, social, and interpersonal behavior) than of purely cognitive performances. There is also evidence that persons with optimal self-concepts tend to utilize their intellectual abilities more efficiently than do those with poor self-concepts.<sup>27</sup>

Although it takes only a cursory glance at curriculum, methods, administration, or counseling literature to conclude that self-concept and its enhancement is a high priority consideration for the education professional, the reasons for this intense interest are somewhat elusive. "Common sense" seems to dictate that how students feel about themselves should influence how they perform school tasks and how they behave in the school environment. However, the correlations between general assessments of self-concept and a wide range measures of achievement and behavior have remained weak and inconclusive.<sup>28</sup> Because the logic of the relationship remains convincing, the area has

not been abandoned by researchers, and more clearly focused and refined studies have yielded important conclusions that substantiate the professionals' interest in the enhancement of self-concept and the development of self-esteem.

A limited body of literature was identified which suggested that a direct linear relationship between self-concept and school achievement may exist. Brookover, Thomas, and Patterson (1964) reported correlations of .42 and .39 between grade point average and self-concept for 1,000 seventh graders.<sup>29</sup> While this relationship is not strong, nevertheless, it is statistically significant.

Johnston postulated that it is practical significance, not statistical significance, that is important to practitioners, so it can probably be concluded that it is not the weak relationship between achievement and self-concept that gives self-concept its importance to the school professional. The intuitive significance that is attached to the student's self-concept probably results from a much stronger and more observable series of phenomena than what is suggested by the unimpressive correlation coefficients noted earlier.<sup>30</sup> In order to trace this intuition, it seems vital to examine research which suggests the manner in which self-concept affects behaviors that are related to academic achievement.

Rosenberg and Gaier<sup>31</sup> studied learning disabled (LD) and "normal" males in grades seven and eight. They discovered that LD students found it difficult to talk in front of their peers and, therefore, did not like to be called upon in class. The LD student also lacked tenacity, being more easily discouraged than were their "normal" counterparts.



Studying reading group membership in the first grade, Weinstein<sup>32</sup> found that students in low reading groups had lowered status in the classroom. This reduced status was reinforced by the teachers, thus leading to the conclusion on the students' part that they were different from others in the classroom.

In a similar study, Zimmerman and Allebrand<sup>33</sup> found that good readers (those scoring high on reading achievement tests) could be characterized as better adjusted than the poor readers. They tended to set long range goals and express more confidence in their ability to meet those goals than did the poor readers who avoided long term goals and did not view their own effort as being closely related to future conditions or events.

Stanwyck and Felker<sup>34</sup> clarified this drive to act in accordance with one's expectations of one's own ability. In studying students in grades three through six, they found that these students had a need for "self-consistency," a term which describes the equilibrium resulting from acting the way one expects oneself to act. Low self-concept students enter a form of conflict whenever they succeed because it defies their own self-expectations. They can resolve this conflict either by adjusting their self-concept to accommodate the success, rejecting the success as meaningless, or evaluating the task as trivial. Low self-concept students tended to resolve this conflict by evaluating the task as trivial.

Research by Coopersmith<sup>35</sup> added credence to the findings reported above. He discovered that individuals with high self-esteem approach tasks and other individuals with the expectation that they will be well-received and successful, whereas low self-esteem individ-

uals believe they will be rejected and unsuccessful. By dwelling upon their ineptitude and failures, those low in self-esteem reduce their opportunities for achieving success.

In their study of law school students, Curtis, Zanna, and Campbell<sup>36</sup> showed that students with a low self-concept will act in ways that prevent the success they are capable of achieving in order to avoid the conflict that would result between self-expectation and successful performance. Students with high self-concepts did not appear to exhibit either this conflict or the accompanying self-defeating behavior.

Liska<sup>37</sup> identified the manner in which self-concept may affect behavior by pointing out that an individual will seek consistency. Students with low self-concepts are likely to persevere in doing things that reinforce their images. This striving for consistency may take the form of disruptive behavior, because the student is accustomed to negative feedback from peers and teachers and does not want to experience the anxiety that would be produced by an alteration of behavior patterns.

Based on a longitudinal study of junior high school boys, Reckless and Dinitz<sup>38</sup> illustrate how dramatically self-concept can be related to behavior. The authors concluded that self-concept may have a direct bearing on the behaviors that are normally associated with juvenile delinquency. Boys with a positive self-concept were less likely to engage in behavior that would result in delinquency than were those with a lower self-concept.

Strommen conducted a study in which 7,050 students were interviewed in order to find out some of their basic responses to life. The

students' responses indicated that the primary cry of youth is a cry of self-hatred, self-criticism, and loneliness. It is distress over character faults, lack of self-confidence, and low self-regard, all of which inhibit personal relationships with peers, parents, and God.<sup>39</sup>

Stanley Coopersmith and his associates conducted an intensive seven-year study of 1,748 subjects. He reported findings that furnish a penetrating view of self-concept and the way it relates to behaviors associated with school performance in various areas.<sup>40</sup> On three related variables, conformity, creativity, and independence, he found that high self-esteem subjects have a tendency to resist social pressures to conform, relying on their own analysis of situations and their own creative mechanisms in order to solve problems. The high self-esteem group was more likely to voice its convictions on an issue, regardless of what they perceived as the opinion of the majority. As expected, the high self-esteem individuals were less concerned than low self-esteem individuals with criticisms that might be levied by their peers for opinions or behaviors that were contrary to those held by the majority.

According to Coopersmith, high and low self-esteem groups also differed in creative performance, with high self-esteem individuals demonstrating more creative behavior on a variety of measures. He further posited that these differences were manifest across a variety of conceptual, linguistic, and artistic skills, and he suggested that those subjects who evaluated themselves highly were generally more capable of achieving and imposing original solutions than those who demonstrated less self-confidence.

Low self-esteem subjects were generally more aware of themselves

in public encounters and were likely to be self-conscious. According to Coopersmith, they had a tendency to fixate on their inadequacies, thus believing in the inevitability of failure. They paralyzed themselves with negative feelings by remembering previous failures, thereby reducing their chances for success in any public situation.

Among Coopersmith's most significant findings were those associated with the relationship between emotional states and self-concept. He concluded that individuals with low self-esteem led a more impoverished emotional life than those with high self-esteem. They had a tendency to exhibit greater anxiety and to demonstrate symptoms of poor mental health. Besides being more expressive and less anxious, individuals with high self-esteem were more apt to communicate a pleasant set of emotions and were less apt to demonstrate unhappiness or despondency.

Coopersmith also concluded that low self-esteem children possessed the tendency to be more violent and destructive than high self-esteem children. Low self-esteem children were more apt to fight and destroy property as they attempted to vent their personal hostilities.

Sometimes educators assume that disadvantaged children are more likely to have lower self-concepts. However, Marsh and Parker (1984) conducted a study in an Australian setting and found that students in low-socioeconomic (SES)/low-ability schools had higher self-concepts than students in high-SES/high-ability schools.<sup>41</sup> Similar research studies carried out in this country obtained findings that concurred with those of Marsh and Parker (e.g., McGough and Kazanas 1979<sup>42</sup> and Soares and Soares 1971<sup>43</sup>).

Leonardson<sup>44</sup> studied the relationship between self-concept and selected academic and personal factors and found Grade Point Average (GPA) and self-concept to be significantly correlated. This finding concurred with that of Brookover, Thomas and Patterson,<sup>45</sup> Campbell,<sup>46</sup> and Purkey<sup>47</sup> who also found a significant relationship between self-concept and GPA.

Byrne<sup>48</sup> investigated the relationship among general self-concept, academic self-concept, and academic achievement. Data were collected from 929 high school students in grades 9 through 12. General self-concept and academic self-concept, albeit moderately correlated, were measured as separate constructs. The moderate correlation of .40 between academic self-concept and academic achievement supported the empirical findings of Calsyn and Kenny.<sup>49</sup> In addition, the moderate correlation between general self-concept and academic self-concept supported similar findings by Shavelson and Bolus.<sup>50</sup> A moderate correlation between general self-concept and academic self-concept implied that high school students were able to distinguish between aspects of their self-concept which related to academic behavior from aspects which related to other types of behavior. Finally, that the general self-concept/academic achievement relation was found to be fairly weak, was consistent with other reported findings (O'Malley and Bachman).<sup>51</sup>

Pottebaum, Keith, and Ehly<sup>52</sup> conducted a longitudinal study to determine the presence and direction of the causal relation between self-concept and academic achievement. The results suggested that there was no significant causal relation between self-concept and academic achievement, but rather that the observed relation was the

result of one or more uncontrolled and unknown third variables. As with any research, a non-significant difference does not necessarily support acceptance of the null hypothesis; several possible alternative explanations are available. First, self-concept and academic achievement may cause each other equally in a cyclical nature. The second possible explanation is that self-concept may cause academic achievement (or vice versa) but that the magnitude of the effect may be too small to be detected.

Purkey<sup>53</sup> summarized the findings of self-concept research in school settings and concluded that research evidence clearly revealed a persistent and significant relationship between the self-concept and scholastic success on all grade levels, and that change in one appeared to be associated with change in the other. The author presented numerous studies indicating how the failing students viewed themselves and how their low self-images contrasted with the high self-images of the successful students. The research data did not furnish clear-cut support regarding which precedes the other--a low self-concept or scholastic failure; a high self-concept or scholastic success. However, it did reveal a strong reciprocal relationship and provided ample evidence to conclude that in order to improve academic performance, educators should give greater emphasis to building positive and realistic self-concepts in their students.

In Purkey's view, educators have the responsibility to investigate and to utilize the student's self-concept as a means of facilitating his or her academic performance. Purkey listed two appropriate ways in which an educator may discover how students see themselves: (1) "self-report," that which can be inferred from students' assertions

about themselves; and (2) "observations," that which can be inferred from the students' behavior.<sup>54</sup>

The foregoing research findings indicate that the self-concept is a valid criterion of the individual's adjustment to life. Furthermore, within the theoretical framework of "self theory," the individual's concept of self is a powerful influence in behavior, facilitating learning and interpersonal relations, or inhibiting them if negative in nature. And since much of the value of investigating the self-concept of high school seniors lies in its utility for the educator, the next section will present an overview of recent national education reports.

#### Education Reports

National attention has been drawn to the academic performance of students attending both public and private schools. Between 1983 and 1985 more than a dozen reports were issued on the state of the nation's schools, from the primary grades through higher education. While the reports differed in many ways, all were critical of current educational practices. All recommended a series of changes in curricular content, testing and standards, methods of teacher training, teacher rewards, and locus of control over schools. Since A Nation at Risk was issued in 1983, school reform has been one of the nation's first priorities.

The reports emanated from diverse sources; however, there was much overlap among individuals serving on the numerous commissions that produced these reports; for example, Patricia Graham and John Goodlad were members of several of the panels. Despite this, there was considerable diversity among the reports about the nature and degree of crisis in America's schools, what reforms are necessary, and how "excellence in education" relates to the country's social, political,

and economic life.

The work of such researchers as Coleman (1981) and Greeley (1981) has begun to change the amount of attention being given to non-public education in America. Not that non-public education is insignificant, for statistics reported in the Washington Post (February 3, 1985) revealed that the number of Christian schools had grown from several hundred in the 1960s to more than 10,000, with close to a million students enrolled, and the number was growing nearly 80,000 per year.<sup>55</sup> A similar report in USA Today indicated that in 1983 nearly one school in four in this country was private.<sup>56</sup>

In 1972, the National Center for Education Statistics (NCES), a federal agency, conducted a national longitudinal study of the effects of schooling on the life and work of the young. The result was the National Longitudinal Study (NLS) of the senior high school graduates of 1972. The NLS has since been followed up at several other points in time. These NLS tapes have provided a valuable data bank on the 22,000 students in the original stratified, random sample and on the thorough follow-ups.<sup>57</sup>

The High School and Beyond (HSB) study closely followed the NLS. The HSB study duplicated many of the NLS questions, attitude items and tests, for comparisons across time. But HSB went beyond the earlier data set in important respects; it included sophomores in addition to high school seniors. It sampled 58,728 students in 893 public and 122 private high schools and added variables not studied earlier.<sup>58</sup> Furthermore, it claimed to have over-sampled certain types of schools, including private schools, in order to permit more sensitive comparisons of differences thought to be of scientific interest or policy



relevance.

For the collection of this new data set, the NCES selected the National Opinion Research Center (NORC) at the University of Chicago, with James C. Coleman as principal investigator. The primary purpose of HSB was the compilation of data and preparation of the tapes in usable form. A secondary purpose of HSB was the production of overall introductory "reports," intended as descriptive summaries of the data and the various other predominant relationships.<sup>59</sup>

The first NORC report was presented on April 7, 1981, in a Washington, D.C. seminar entitled "What Do We Know About Private Schools?" The seminar presentation was made by James Coleman, Thomas Hoffer, and Sally Kilgore.<sup>60</sup>

Subsequent to the presentation of the aforementioned report in April of 1981, Duke University researchers re-analyzed a portion of the HSB data and reached contradictory conclusions. Specifically, they examined two of the widely publicized conclusions of the NORC report, (1) that private schools produce better cognitive outcomes, even after controlling for student quality, and (2) that private schools are more integrated than public schools.<sup>61</sup> Both of these conclusions, according to the Duke researchers, seem to be predicated on faulty definitions and can be refuted within the same data set used by NORC.

Page and Keith, who participated in the Duke University study, reported that their data analysis does not close the case for the nation's private schools. They posited that the NORC descriptive data still stand: the usual private school was seen as a somewhat more orderly, more demanding, safer, fairer educational institution than the usual public school.

Other critics who re-analyzed Coleman's 1980 data were Alexander and Pallas,<sup>62</sup> and Willms.<sup>63</sup> They argued that the alleged benefits of Catholic schooling were either far smaller than Coleman had claimed, statistically insignificant, a by-product of specification error, or all three.

Hoffer, Greeley, and Coleman,<sup>64</sup> Willms,<sup>65</sup> and Alexander and Pallas<sup>66</sup> have now used the 1982 follow-up data for the 1980 sophomores to check their earlier claims. The following conclusions can be drawn from these three studies:

1. Juniors and seniors learn slightly more in Catholic high schools than in public high schools.
2. The magnitude of this advantage is uncertain. The point estimates average 0.03 or 0.04 standard deviation per year in HSB, depending on whether we focus on the typical Catholic-school sophomore or the typical public-school sophomore. But the confidence interval for the population value is very broad and the effect varies by test.
3. The evidence that Catholic schools are especially helpful for initially disadvantaged students is quite suggestive, but not conclusive.<sup>67</sup>

Reacting to Coleman's (1981) study, Greeley<sup>68</sup> focused his research on the Catholic sector of secondary education. His priority was the minority student in the Catholic educational system. Greeley's findings indicated that Black and Hispanic students were approximately one half of a standard deviation ahead of their public school counterparts. He attributed this superior performance to the stricter disciplinary climate of the Catholic school and/or its superior instructional environment.

In view of Coleman's and Greeley's findings that the usual private school was a somewhat more orderly, more demanding, safer, and fairer educational institution than the usual public school, Sommer<sup>69</sup> posited that if a parent prefers that a child has that particular type

of environment, the cost of private school attendance may be justified. Furthermore, he stated that if the government is willing to share some of this parental expense, in view of the savings from the public tax burden, this remains an educational, economic, political, and philosophical option that requires further consideration.

The aforementioned studies involving private schools included the Catholic sector of secondary education in their research samples; however, no mention was made of having included any evangelical Christian schools in the samples. The next section of this literature review will present studies that dealt with the evangelical Christian school community.

#### Christian School Studies

In Holmes' (1983) study What Parents Expect of the Christian School, it was found that approximately six out of ten (57.7%) Christian school parents chose Christian school enrollment for their children for one distinct purpose--to have their children in a Christ-centered academic (CCA) environment. Their wish for CCA was so prevalent that even the desire for a strong academic environment could only garner less than half as many first place votes (24.6%) for the primary reason for enrollment.

Some of Holmes' research conclusions were as follows:

The greatest difference among the sample of parents occurred when the parents were placed in the categories of born again evangelical households and non-born again households. Christ-centered academics (CCA) was the primary reason for enrollment for all three ethnic groupings and for the born again households. This trend was so strong that in every ethnic tabulation the percentages for CCA were double that of Academics. But, for the non-born again households, Academics emerged as the primary enrollment reason.<sup>70</sup>

Holmes offered explanations for the findings of his study:

An unquestionable stand for Christ-centered education may cause some people to shy away from enrolling their children, but the evangelical Christian school will only appeal to a limited portion of the population anyway. Those parents who find their children's needs met by the Christian school seem to want some very specific things--Christ-centered academics, strong academics, a disciplined environment, and a caring staff. All of these the evangelical Christian school, with its unique approach to education, can offer.<sup>71</sup>

Since religion was such a major factor in enrollment, the majority of the parents would probably not be pulled back into the public system through the offering of alternative schools that are proposed in various parts of the country. Also, based on the constraints of American law, it would be inconsistent to presume that the Christian school would be eligible for public monies to help alleviate the impact of the growing costs of private education.<sup>72</sup>

Research in Kentucky and Wisconsin on administrators and parents in evangelical Christian schools indicated the reasons why such schools were started and why families sent their children to them. Administrators started Christian schools primarily for religious reasons--to promote their students' "religious salvation and moral development" and to offer alternatives to the public schools' "secular humanism"--and only secondarily for educational reasons. Parents sent their children to Christian schools both because of church membership and religion and because of dissatisfaction with public schools' academic quality, discipline problems, and violence. Parents continued patronizing Christian schools because they were satisfied with the quality of education, they could afford the tuition, their children liked the schools' small size, and the commitment of the teachers.<sup>73</sup>

White (1985) employed a recently-developed questionnaire to compare the spiritual development of evangelical high school seniors attending Christian schools and public schools and concluded that there were no significant differences in mean scores between evangelical Christian school students and evangelical public school students. The implication of this finding is that the Christian school treatment does

not make a significant difference in spiritual growth and development.<sup>74</sup>

In retrospect, White surmised that perhaps a better way to measure Christian school successes would have been to measure the self-worth of Christian school students, for self-worth is a concept that can be measured by a previously validated instrument. Thus, he contends that it may be more valid to measure the effects of spiritual growth as reflected in the evaluation of self-esteem, rather than the spiritual growth itself.

Most religious schools exist to give not only an academically sound education, but to inculcate the religious philosophy of the institutions into the characters of its students. As Holmes (1983) pointed out, within the Christian community parents do not choose Christian schools primarily for academic reasons. Their main concern is for a philosophy of education that is in harmony with what is taught at home and in the church. Therefore, various studies have been conducted to examine how effective religious schools are (White 1985; Holmes 1983; Harris 1981; Dalrymple 1981; Bonnot 1981; O'Gorman 1979; Rossi and Rossi 1961).

To date, however, little or no research has dealt with the effectiveness of Christian schools in regard to self-concept development. The purpose of this study is to lay the groundwork for future research in this area.

#### Limitation of Christian School Research

Catholic educators have done several studies concerning the effectiveness of their schools (Lee 1987; Jensen 1986; Harris 1981; Dalrymple 1981; Bonnot 1981; O'Gorman 1979; Rossi and Rossi 1961). As

of this date, however, the evangelical Christian school movement has done little to investigate its successes (White 1985). Therefore, Christian school educators could, with good reason, view this study as a legitimate area for research.

### Public Versus Private Education

The current research findings on public and private schools reported above seem to indicate that public education in America has been problematical. National reports have drawn attention to the lack of academic progress being made in many public schools (Goodlad 1984;Sizer 1984; Peterson 1983; Boyer 1983; Bell 1983). At the same time studies have been conducted concerning the progress of students in private education (Greeley 1981; Coleman, Hoffer, and Kilgore 1981). The comparison of public and private education would seem to indicate that students perform better in private schools.

Recently the urban public school system has begun to focus more attention on the role that limited cooperation and consensus have played in their lack of progress. Perhaps the Christian schools have been more effective because, theoretically, their leaders, teachers, parents, and students are philosophically attuned. Their dedication to a Biblical view of education allows the constituents of the Christian school to concentrate on educational progress. Because the philosophical issues were settled before the creation of the Christian educational institution, there need not be a continual upheaval regarding values and priorities.

In addition, the numerous characteristics of Christian schools which comprise the school climate or "ethos," especially concentrated in the teaching staff and in what many have identified as a sense of

community, may exert a positive influence on self-esteem. Future research may show that the differences between public and Christian school students diminish if the public schools establish a school environment similar to the environment found in Christian schools.

Lee<sup>75</sup> states that if schools are to be realistic, effective, and educational, they must meet their clientele's basic needs including religious needs. If public schools wish to defuse public dissatisfaction and to provide a rich education for all students, they must boldly develop plans and programs which are genuinely pluralistic.

### Self-Concept and the Christian

McDill<sup>76</sup> expanded the above concepts by claiming that the Christian faith promotes a healthy self-respect and, in turn, a healthier self-concept. "Love for self" is an essential by-product of Christian doctrine. It is cited in a familiar passage from the Bible, "Thou shalt love thy neighbor as thyself," (Mark 12:31).

What is the role of self-esteem in the Christian experience? Blitchington<sup>77</sup> asserts that when you refer to a Christian's self-concept you are actually referring to the experience of self-worth, not self-esteem. He claims that self-esteem is another term for egotism and therefore has no relevance for Christians. Self-worth, on the other hand, is what individuals feel when they know that God loves them. Furthermore, in some areas, the Christian with low self-esteem may be better off than the one with high self-esteem. He also states that the anxious person with low self-confidence may be more open to the changes induced by the "born-again experience." Paul wrote in Romans 12:3 that the Christian was "not to think of himself more highly than he ought to think."

Is it possible that the person with low self-esteem finds it easier to depend upon God than the person with high self-esteem? Can high self-esteem sometimes become a barrier, preventing individuals from calling upon God and impelling them to rely upon themselves rather than God? These questions invite further exploration on the Christian aspect of self-esteem.

Blitchington states that the best way to handle low self-esteem is to use it as a motivation for developing a deeper relationship with God. Sometimes human beings need to experience a sense of worthlessness or pain before they are willing to turn to God. By identifying oneself with God, individuals can insure their own identities. The greatest need for the Christian is not for self-esteem but, rather, for self-worth. It is for a connection to God. After that, self-esteem will take care of itself.<sup>78</sup>

It seems plausible to conclude, from the above survey of the literature, that there are significant reasons for stressing the enhancement of self-concept in the schools. Although much has been written about the construct of self-concept and much research has been conducted on the topic, it is apparent that more has yet to be done in this area. From the work that has been completed, it seems safe to say that a person's self-concept is an important aspect of that individual and will play a primary role not only in general behavior, but also in personal success.



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## CHAPTER III

### METHODOLOGY

This study sought to determine what differences exist in the self-concepts of seniors from reporting public high schools and seniors from reporting Christian high schools as measured by the Tennessee Self-Concept Scale (TSCS). In order to control for possible differences between the two groups due to other factors, the research design employed subscales of the TSCS as covariates in the data analysis. It was predicted that there would be significantly higher scores on the Moral-Ethical Self, Self-Satisfaction, and Behavior scales of the TSCS for seniors from Christian high schools as compared to the seniors of public high schools.

#### Sample Description and General Testing Procedures

Subjects for the investigation consisted of 147 seniors in public high schools and Christian high schools in three cities in southeastern Virginia. One public high school and one Christian high school were selected from each of the cities of Norfolk, Portsmouth, and Chesapeake. The city of Virginia Beach was also chosen to be a part of the sample; however, the director of research for that public school system declined to participate.

One public school was chosen by the director of research in each city sampled. The principal of each selected school identified one intact senior English class to participate in the study. An English

class was chosen because all students are required to take English, and it was thought that a sampling from this group would be most likely to represent all types of students. Table 1 describes the sample, showing the city, type of school, and number of seniors involved in this study.

TABLE 1  
DESCRIPTION OF SAMPLE

City	Type of School	Number of Seniors
Norfolk	Public	25
	Christian	25
Portsmouth	Public	24
	Christian	23
Chesapeake	Public	25
	Christian	25
Total		147

A Christian school was selected from each of the public school districts involved in the study. The Christian school reporting the highest number of seniors was chosen in order to have a comparable number of subjects with the public school in that particular city.

Once permission to participate was received from the principal, telephone contact was then made with the senior English teacher in each school. After the study was explained to them, testing dates were scheduled for the months of October and November, 1986.

The TSCS instruments were administered by the principal

investigator to each of the six intact classroom groups during a regular class period. Students were given the option of refusing to take part in the study. However, all students elected to participate. The standardized instructions which appear on the front of the instrument were read verbatim, and the researcher employed similar administration procedures in each of the testing sessions. Confidentiality of testing was maintained, as subjects were not asked to submit their names. In schools where individual feedback was requested, the students were asked to provide their social security numbers as a means of identification. Those subjects not knowing their social security numbers were instructed to use their telephone numbers.

It should be noted that the researcher added one item to the TSCS standardized instructions. Each subject was requested to record his or her current grade point average (GPA). The data collected were not used, however, because of the confusion and inconsistencies that surfaced during data collection procedures. Most Christian school seniors were unfamiliar with the term "GPA" and could not make an accurate estimate. The public school seniors were, in most cases, able to record their GPAs; however, public school educators revealed that each of the three public schools had different ways of recording the grade point averages of its students.

Several of the schools requested individual feedback regarding each student's self-concept (in addition to the group results). To those schools, the researcher supplied each participant with a graph and brief verbal synopsis depicting his or her self-concept profile.

#### Instrumentation

The Tennessee Self-Concept Scale (TSCS) was selected as the



instrument to be used to measure the self-concept of the seniors in this study. Robinson and Shaver, in listing some 61 scales that measure self-concept, placed the TSCS at the top of the list in perceived overall quality in measuring self-concept of individuals.<sup>1</sup>

The TSCS is an objective, Likert-type, self-report scale developed from a clinical mental health perspective. It measures self-concept across many sub-areas, providing both an overall self-esteem score and a complex self-concept profile. The scale consists of 100 self-descriptive statements which subjects use to portray their pictures of themselves. Ninety of the statements are equally divided into five general categories: Physical Self, Moral-Ethical Self, Personal Self, Family Self, and Social Self. The remaining ten statements comprise the Self-Criticism Scale.

Scoring on the TSCS uses a phenomenological system for classifying items on the basis of what the subjects themselves report about themselves. A 3x5 classification scheme is used to interpret performance. An analysis of the individual's responses conveys three categories: (1) This is what I am, (2) This is how I feel about myself, and (3) This is what I do. These three types of statements form the three horizontal categories. These scores represent an internal frame of reference within which individuals describe themselves.

In addition, the item pool analysis also indicates the subjects' external frame of reference. This external frame of reference forms the five vertical categories: Physical Self, Moral-Ethical Self, Personal Self, Family Self, and Social Self. These categories comprise the five Column Scores of the Score Sheet. Thus, the whole set of items is divided two ways, vertically into columns (external frame of

reference) and horizontally into rows (internal frame of reference) with each item and each cell contributing to two different scores. For example, the Self-Satisfaction (how I accept myself) category refers to how I accept myself physically, morally, socially, and so on. This score comes from those items where individuals describe how they feel about the selves they perceive. In general, this score reflects the level of self-satisfaction or self-acceptance.

On the TSCS, there are five response categories for each question, running from "completely true" (5) to "completely false" (1). The total positive score for the items comprise the overall self-esteem measure.

Examples of items are as follows:

- 13. I take good care of myself physically. (physical)
- 33. I try to change when I know I'm doing things that are wrong.  
(moral)
- 42. I am losing my mind. (personal)
- 58. I am not loved by my family. (family)
- 89. I do not forgive others easily. (social)

Two of these items are keyed so that agreement indicates high self-esteem. For the other three items, scoring is reversed, thus low scores would add to a positive score for that scale. Therefore, the total score possible for these five items would be 25. Each of the sample items has the sub-area of self-esteem which it represents noted after it. The TSCS may be either hand or computer scored.

#### Psychometric Data

The standardization group from which the norms were developed was a broad sample of 626 people from various sections of the country.

They ranged in age from 12 to 68. There were approximately equal numbers of both sexes, both black and white subjects, representatives of all social, economic, intellectual, and educational levels from sixth grade through the Ph.D. Subjects were obtained primarily from high school and college classes.<sup>2</sup>

The TSCS manual reported that samples from other populations do not differ appreciably from the norms, provided they are large enough samples (75 or more). Additionally, the effects of such demographic variables as gender, age, race, education, and intelligence on the scores of this scale are negligible. Several studies are cited, one using high school students, that provide evidence that there is no need to establish separate norms by age, gender, race, or other variables. The norms are over-represented in number of college students, white subjects, and persons in the 12 to 30 year age bracket.<sup>3</sup>

Thompson<sup>4</sup> disagrees with Fitts' conclusion that there are no significant age differences in self-concept as measured by the TSCS. His findings reveal that numerous investigators, particularly those engaged in research with adolescents, have reported data from allegedly normal groups which appear to deviate significantly from the TSCS norm group described by Fitts. Therefore, it appears that age is an important variable in accounting for individual differences in self-concept, especially for young people (under 20). These findings mean that age is a variable which must be controlled or accounted for in some fashion. This researcher controlled for the age factor by limiting the sample to high school seniors.

Test-retest reliability coefficients reported in the test manual range from .64 through .92 from a study with 60 college students over a

two-week period. Using a shortened version of the TSCS with psychiatric patients, a reliability coefficient of .88 was obtained for the Total Positive Score. Fitts finds other evidence of reliability in the similarity of profile patterns through repeated measures of the same subjects over long periods of time. Through various types of profile analyses he demonstrates that the distinctive features of individual profiles are still present for most persons a year or so later.

Correlations with other measures further assessed validity.<sup>5</sup> Correlations between MMPI scores and comparable scores on the TSCS ranged from .27 to .70. Correlation ratios indicate a rather clear nonlinear relationship between scores on the Edwards Personal Preference Schedule and the TSCS. Predictive validity is further assessed in the numerous studies cited in Tennessee Self-Concept Scale Bibliography of Research Studies<sup>6</sup> that dealt with self-concept as a criterion of change and furnished evidence that the self-concepts of individuals are altered as a result of significant experiences.

#### Statistical Analysis

Data collected within this investigation were subjected to one-way multivariate analysis of covariance (MANCOVA)<sup>7</sup> to determine whether the Self-Satisfaction scores, the Behavior scores, and the Moral-Ethical Self scores of the TSCS varied as a function of the type of school. Adjustment was made for three covariates. One covariate was the Identity score on the TSCS. The other two covariates represented composite scores: the first represented a combination of the Physical Self score and the Personal Self score on the TSCS; the other represented a composite of the Family Self score and the Social Self score on the TSCS. Following a significant overall MANCOVA, separate

univariate F tests were employed to determine which dependent variables were significantly related to the school of attendance.

The researcher selected the Self-Satisfaction, Behavior, and Moral-Ethical Self subscales as the three dependent variables because they seemed most likely to discriminate between the two groups. The remaining five subscales were chosen as covariates because the researcher predicted that the two groups would be similar on these measures. In essence, the covariates were used to statistically match the independent variable groups, thereby reducing prior differences by equating all subjects on the measured covariate scores. With multiple covariates, however, a point of diminishing returns can quickly be reached, especially if the covariates are highly correlated with one another.<sup>8</sup> Therefore, the researcher decreased the number of covariates from five to three by forming composite scores from related subscales. Close examination of the various subscales of the TSCS revealed that the Physical Self subscale and the Personal Self subscale were similar and probably highly correlated with each other, so these two scores were combined to form a composite score. The Family Self subscale and the Social Self subscale were also found to be comparable and highly correlated; they, too, were used as a composite score. (The breakdown of the 100 items on the TSCS into categories is presented in appendix A.)

The SAS stepwise regression analysis was performed as an additional check on the data. Prior to the use of the statistical procedure, covariates were chosen by the researcher based on what they appeared to measure and the fact that they were likely to reduce potential pre-existing differences between schools. As an objective

check against the selection of covariates, a multiple regression procedure was employed which allowed the covariates to mathematically form the best linear combination for removing extraneous differences. Then the variables of interest were added to the equation to see if they still distinguished between the two types of schools. The results were redundant to those obtained in the MANCOVA procedure. (The computer print-outs for SAS stepwise regression can be found in appendix D).

The .05 level of significance was established as the criterion for the statistical tests. The statistical analysis was completed by using the Statistical Analysis Systems (SAS) at Old Dominion University Computer Center, Norfolk, Virginia.

## ENDNOTES

<sup>1</sup>John P. Robinson and Phillip R. Shaver, Measures of Social Psychological Attitudes (Ann Arbor, Michigan: Survey Research Center, Institute for Social Research, University of Michigan, 1973), 57.

<sup>2</sup>William H. Fitts, The Tennessee Self-Concept Scale (Nashville: Counselor Recordings and Tests, 1965a), 1-30.

<sup>3</sup>Ibid.

<sup>4</sup>Warren Thompson, Correlates of the Self-Concept (Nashville: DeDe Wallace Center, 1972), 6-23.

<sup>5</sup>William H. Fitts, 1965a, 13-30.

<sup>6</sup>William H. Fitts, Patricia Fitts Reed, and Linda Boehm, Tennessee Self-Concept Scale, Bibliography of Research Studies (Los Angeles: Western Psychological Services, 1980), 1-82.

<sup>7</sup>Richard J. Harris, A Primer of Multivariate Statistics (New York: Academic Press, 1975), 20-23.

<sup>8</sup>Bradley E. Huitema, The Analysis of Covariance and Alternatives (New York: John Wiley & Sons, 1980), 248-49.

## CHAPTER IV

### RESULTS

The purpose of the present investigation was to ascertain the differences in self-concept between public and Christian high school seniors as determined by the Tennessee Self-Concept Scale (TSCS). One-way multivariate analysis of covariance (MANCOVA) was employed to measure whether the Moral-Ethical Self scores, Behavior scores, and Self-Satisfaction scores varied as a function of the type of school after adjusting for the covariates.

Means and standard deviations of each subscale by type of school are presented in table 2. Comparison of mean scores and standard deviations indicates differences between Christian and public schools in several categories. Of note are mean differences on the Total-Self, Self-Satisfaction, Behavior, and Moral-Ethical Self subscales.

Inferential analysis of the data was done through SAS MANCOVA using the general linear models procedure. Results of evaluation of assumptions of normality, homogeneity of covariance matrices, linearity, homogeneity of regression, and multicollinearity were satisfactory. Covariates were judged to be adequately reliable for covariance analysis.

After statistically adjusting for differences in the covariates (Physical Self/Personal Self composite score, Family Self/Social Self composite score, and Identity score), the dependent variable (Moral-Ethical Self score) made a significant contribution to the composite



TABLE 2  
SCORES ON THE TENNESSEE SELF-CONCEPT SCALE

Variable	Type of School	Mean	Standard Deviation
Total Self	Christian <sup>a</sup>	339.90	13.39
	Public <sup>b</sup>	335.47	7.88
Identity	Christian	125.55	3.86
	Public	125.91	1.04
Self-Satisfaction	Christian	105.22	3.99
	Public	103.39	3.59
Behavior	Christian	109.13	6.13
	Public	106.17	3.65
Physical Self	Christian	70.41	2.21
	Public	71.07	1.29
Moral-Ethical Self	Christian	69.13	3.21
	Public	65.88	2.97
Personal Self	Christian	65.91	3.23
	Public	66.12	1.19
Family Self	Christian	66.71	2.77
	Public	65.47	1.54
Social Self	Christian	67.77	2.42
	Public	66.76	2.77

<sup>a</sup><sub>n</sub> = 73

<sup>b</sup><sub>n</sub> = 74

dependent variable that best distinguished between public and Christian schools,  $F = 9.25$ ,  $p < .01$  (table 3). Another dependent variable, the Behavior score (table 4), after adjustment for covariates, also made a significant contribution to the composite dependent variable,  $F = 4.17$ ,  $p < .05$ . (The MANCOVA computer printout is located in appendix C.)

The last dependent variable, the Self-Satisfaction score, did not

TABLE 3  
UNIVARIATE ANALYSIS OF COVARIANCE FOR MORAL-ETHICAL  
SELF SUBSCALE ON THE TENNESSEE SELF-CONCEPT SCALE

Source	DF	Type I SS	F Value	PR>F
Physical Self/Personal Self	1	1935.18	45.31	0.0001
Family Self/Social Self	1	498.92	11.68	0.0008
Identity	1	252.54	5.91	0.0163
School	1	394.93	9.25	0.0028
Error	142	6064.28		
Corrected Total	146	9145.85		

Physical Self/Personal Self, Family Self/Social Self, and Identity subscales were used as covariates.

TABLE 4  
UNIVARIATE ANALYSIS OF COVARIANCE FOR BEHAVIOR  
SUBSCALE ON THE TENNESSEE SELF-CONCEPT SCALE

Source	DF	Type I SS	F Value	PR>F
Physical Self/Personal Self	1	11255.57	268.05	0.0001
Family Self/Social Self	1	2807.76	66.87	0.0001
Identity	1	511.24	12.18	0.0006
School	1	175.23	4.17	0.0429
Error	142	5962.638		
Corrected Total	146	20712.42		

Physical Self/Personal Self, Family Self/Social Self, and Identity subscales were used as covariates.

make a statistically significant contribution to the composite dependent variable after adjustment for the covariates,  $F = .66$ ,  $p < .05$

(table 5). Even though the Self-Satisfaction score was not statistically significant, the Christian school group did score slightly higher than the public school group on the means (105.22 for the Christian school group and 103.39 for the public school group).

TABLE 5  
UNIVARIATE ANALYSIS OF COVARIANCE FOR SELF-SATISFACTION  
SUBSCALE ON THE TENNESSEE SELF-CONCEPT SCALE

Source	DF	Type I SS	F Value	PR>F
Physical Self/Personal Self	1	14331.41	301.73	0.0001
Family Self/Social Self	1	3522.88	74.17	0.0001
Identity	1	472.55	9.95	0.0020
School	1	31.41	0.66	0.4175
Error	142	6744.75		
Corrected Total	146	25102.99		

Physical Self/Personal Self, Family Self/Social Self, and Identity subscales were used as covariates.

Analogous to the use of the post hoc procedure following a significant overall F, the usual method of further analysis after a significant MANCOVA is to run a univariate F test. Tables 3, 4, and 5 present the results of the univariate F tests for the Moral-Ethical Self subscale, the Behavior subscale, and the Self-Satisfaction subscale.

Four test statistics were used for inferring population differences on the basis of sample data.<sup>1</sup> All four test statistics (Wilks' Criterion, Pillai's Trace, Hotelling-Lawley Trace, and Roy's Maximum Root Criterion) provided the same answer, .0209, in assessing mean

differences. These four criterion references indicated that the combined dependent variables were significantly related to the combined covariates, approximate  $F(3,140)=3.35$ ,  $p<.05$ . Table 6 presents the results of the overall MANOVA.

TABLE 6  
MULTIVARIATE ANALYSIS OF VARIANCE TEST CRITERIA FOR  
THE HYPOTHESIS OF NO OVERALL SCHOOL EFFECT

Test Statistic	DF	PR>F
Wilks' Criterion	F(3,140)	.0209
Pillai's Trace	F(3,140)	.0209
Hotelling-Lawley Trace	F(3,140)	.0209
Roy's Maximum Root Criterion	F(3,140)	.0209

Physical Self/Personal Self, Family Self/Social Self, and Identity subscales were used as covariates.

In summary, findings of this study indicated that the seniors of Christian high schools scored significantly higher on the Moral-Ethical Self score and the Behavior score of the TSCS than did the public high school seniors. Differences between the Christian high school and public high school seniors on the Self-Satisfaction score on the TSCS were not significant at the .05 level.

## ENDNOTES

<sup>1</sup>Barbara G. Tabachnick and Linda S. Fidell, Using Multivariate Statistics (New York: Harper & Row, Publishers, 1983), 173-291.

## CHAPTER V

### CONCLUSIONS AND RECOMMENDATIONS

This study made a contribution to the advancement of knowledge by building a data base in the area of Christian self-concept. Comparisons were made between selected seniors from public and Christian high schools employing three of the subscales of the Tennessee Self-Concept Scale (TSCS) as variables. Variations in these variables, as a function of the type of school, were identified after adjusting for the covariates (the remaining subscales of the TSCS) using a multivariate analysis of covariance (MANCOVA) statistical procedure.

#### Conclusions

Based on the analysis of the data obtained in this study, and subject to the delimiting factors stated in Chapter I, the following conclusions are warranted:

1. Selected Christian high school seniors had significantly higher means on the Moral-Ethical Self Scale of the TSCS than did selected public high school seniors.

This conclusion may be partially explained by the research reported by Holmes (1983) and Turner (1981) showing that Christian school parents made strong statements regarding their religious commitments. Since Christian education is based on the moral-ethical precepts of the Bible, it seems likely that Christian school students would score higher on such TSCS items as "I am true to my religion in

my everyday life," and "I am satisfied with my relationship to God."

Another possible explanation for the higher scores of Christian high school seniors in the Moral-Ethical Self category may be the result of the "born-again" experience that has been manifested in their lives. According to evangelical doctrine, the "born-again" experience would cause students to seek a closer relationship to God and to be more interested in Biblical teaching and church attendance. Logically, then, we might assume that they would also prefer to be in a school setting where religious principles are being postulated.

It might also be concluded that the differences in the Moral-Ethical Self category are due to selection factors. The reasons that students select and remain in Christian high schools may have more to do with moral-ethical matters than those who select and remain in public schools. Furthermore, it should be understood that the explanations regarding the conclusions of this study are the speculations of the researcher, who recognizes that other variables, such as cultural elements, academic ability, family life, or socioeconomic status, may also be impacting these results.

2. Statistical significance did exist for the hypothesis regarding the Behavior Scale score. The means on the Behavior Scale differentiated between the two groups in the direction of the Christian high school group.

The findings concerning the Behavior category and the Moral-Ethical Self category parallel the conclusions of clinical psychologist Clyde Narramore<sup>1</sup> and Christian counselor Jay Adams<sup>2</sup>, who report that one's religious conversion (i.e., "born-again" experience) significantly affects the individual's personality and behavior. They claim

that those who have had a born-again religious experience tend to exhibit more socially acceptable behavior; and, in turn, they have a higher estimation of their own self-worth.

Both Narramore and Adams claim that the behavior-self-concept relationship is a reciprocal one. Not only does one's self-concept affect behavior but the reverse is also true. Furthermore, they report that their counseling experiences have caused them to conclude that one's behavior has more of an effect on self-worth than vice versa. This finding suggests that educators may need to concentrate more on changing behavior as a means of raising self-esteem.

The philosophy of the evangelical Christian school movement suggests that its foremost priority is to lead its enrollees into a born-again experience. By applying the reasoning of Narramore and Adams, we may assume that the born-again experience will lead to improved behavior and, thus, to a higher self-concept. Or the reverse assumption may also apply: students who have been born-again will experience an improved sense of self-worth, thereby leading to better behavior. In either case, the born-again Christian high school subjects would be assumed to score higher than the public high school subjects in the behavior category of the TSCS. At this point, one might wonder about the impact of born-again Christian students who attend public high schools. The Christian school atmosphere probably provides more opportunities to learn moral-ethical concepts and to demonstrate behavior that is related to such principles. Furthermore, because teachers in the Christian school are hired primarily for their exemplary characters, it would be expected that they would provide more effective role models in these areas.



The above explanations regarding the Behavior category of the TSCS are solely the researcher's speculations. In addition, the researcher acknowledges the possible impact of other intervening variables, such as the number of years of parental education, family life, academic ability, socioeconomic status, or various cultural factors.

3. No statistically significant difference in mean scores was found between self-reported scores for Christian and public high school seniors on the Self-Satisfaction Scale of the TSCS. While the scores did favor the Christian high school seniors by a couple points, this difference was not sufficient to be statistically significant.

While no significant difference in means was found between public high school seniors and Christian high school seniors, there may be an undetected latency effect in operation. Kraybill supports the belief that there is a "sleeper" effect in regard to the result of Christian school attendance. He predicts that there will be few discernible results while subjects are still in school; instead, the effect of the Christian school will make a long-term difference. According to Kraybill, "As the graduates grow up and mature, the Christian school experience will blossom and exert a strong influence on adult behavior . . ." <sup>3</sup> especially in such crucial areas of decision making as marital and occupational choice, church involvement, and family-social relationships. If the findings and speculations of Kraybill are true, the immediate benefits of a Christian school education may not be apparent for several years. A study of different aged graduates of both Christian and public schools would be beneficial in determining when and if differences between them begin to appear in the

Self-Satisfaction category of the self-concept as measured by the TSCS.

### Recommendations

The influence of the Christian school is a relatively unexplored topic and requires further investigation. The following are recommendations for further research:

1. A longitudinal study involving Christian and public high school students during their post-high school years would be enlightening. It would be beneficial to pretest and posttest students from each group as high school seniors and then as adults ten years later. If latency is a factor, it would be revealed through such research analyses. Should significant differences be discovered between public and Christian school students, one could conjecture that the type of school had a treatment effect on students during their high school years.

2. Several comparative studies involving the self-concept of Christian school students and their teachers would be helpful to determine the impact of the teacher's self-concept on that of his or her students.

3. A longitudinal study involving the same high school students as they progress from grades nine through twelve would be beneficial in order to measure the impact, if any, type of school has on self-concept development in high school students. A comparative study between public and Christian high school students could test freshmen, sophomores, juniors, and seniors to ascertain the rate of increase in each type of school. If the scores in the Christian school increase at a higher rate, one may conjecture that the Christian school treatment has a greater effect on self-concept development than the

public school.

4. Since the findings of this study indicate that Christian high school seniors have a higher self-concept than public high school seniors on two scales of the TSCS, it seems reasonable to assume that there might be a positive correlation between the number of years in attendance at a Christian high school and the student's level of self-esteem. A research study that would attempt to discover the relationship between the length of time of a student's Christian school attendance and the level of his or her self-worth would be useful. A relevant study would be one that compares the self-concept scores of Christian high school seniors who have been in the school several years to those who are recent enrollees. If these scores are similar, we may conclude that other intervening variables are at work in addition to school-related factors such as atmosphere, curriculum, and teachers.

5. Future research studies, similar to this one, should consider adding an observational component--a report from teachers, parents, and/or peers regarding the student's self-concept. Being able to compare the findings on several different types of reports would add to the validity of the research study.

6. To control for the religious environment as the confounding variable in the increase of self-esteem, a sample of private non-religious schools could have been added to the present sample. However, if the born-again experience rather than the religious environment is the confounding variable, merely adding this additional group will not produce the desired results. All three samples (public, Christian, and private non-religious schools) would need to be divided into born-again and non-born-again categories. If the religious

environment is the confounding variable, only the Christian school group will score higher. However, if the born-again experience is the primary contributing variable, the students in the born-again category, no matter which school they attend, will demonstrate higher self-esteem.

Furthermore, the born-again factor and the religious environment will probably interact. The born-again experience is an instantaneous act of the will while the religious environment is an on-going environmentally-produced experience involving the inculcation of Biblical principles. Christian school philosophy posits that the student needs to be born again in order to fully benefit from Biblical teaching. Therefore, it seems likely that in the aforementioned sample of students, the born-again student enrolled in the Christian school will exhibit the highest self-concept in the Moral-Ethical Self category and the Behavior category of the TSCS.

To further control for the "born again" variable, one might add Christians who have not had the born-again experience to the sample as an additional comparison group. Perhaps this would allow the researcher to distinguish between the born-again factor and the religious environment factor as the confounding variable.

Another alternative that would serve as a control mechanism for the "born-again" factor would be to select a sample of born-again public school students to compare with a sample of born-again Christian school students. The above interpretations must be made with caution, however, because the influence of the subject's home and church environment is of utmost concern. The principal investigator acknowledges that there may be numerous other intervening variables affecting

the findings of this study.

7. Additional studies of the self-concept of high school students should be undertaken using the TSCS as well as other self-concept measuring instruments. Ultimately, hypotheses are confirmed only through replications which provide additional insight.

Follow-up research would probably benefit by adding additional variables such as the born-again factor and/or the environmental component. Inclusion of these variables may help to further identify causality.

### Intervention Strategies

One value of investigating the self-concept of high school seniors lies in its utility for the educator. This study indicated that it may be possible to assess potential problem areas in the students' sense of self-esteem and, thereby, focus attention on intervention efforts. This opens the door to working with students in such a way that they become more successful and well-adjusted learners.

Self-concept surveys should become a part of the testing program in both Christian and public schools. Early identification of students with low self-esteem may enable educators to forestall later problems.

Intervention could be attempted through the organization of support groups which would address students' needs and provide positive feedback. Teacher, student, and parent support groups could stress programs supporting healthy self-concepts.

In addition, educators could organize committees to monitor the progress, behavior, and attendance of high risk students. These groups could receive referrals, suggest action for intervention, and communicate concerns to parents and staff. This support group should

be given access to resource personnel and resource materials.

In view of the findings of this study, it might be wise for public schools to consider what kinds of curricular changes could be made in order to raise the self-esteem of their students. Bray<sup>4</sup> claims that it should be the responsibility of all school systems, whether private or public, to provide its students with a well-developed moral and spiritual education. His strategy for accomplishing this in the public schools is called "Released Time Education," which he claims has already been instituted in many of our fifty states. It allows public school children to be dismissed from class each week during regular school hours, upon request of the parents, for religious instruction. It is conducted off-campus, and the instructors have no public school connections. Thus, public school administrators are provided a means of cooperating with home and church in arriving at a solution to this need.

## ENDNOTES

<sup>1</sup>Clyde M. Narramore, The Psychology of Counseling (Grand Rapids, Michigan: Zondervan Publishing House, 1960), 133-59.

<sup>2</sup>Jay E. Adams, Competent to Counsel (Grand Rapids: Baker Book House, 1970), 128-210.

<sup>3</sup>Donald A. Kraybill, Mennonite Education (Scottsdale, Pennsylvania: Herald Press, 1978), 22.

<sup>4</sup>Jim R. Bray, "Religion: An Elective in the Public Elementary School," Christians in Education 2 (Winter 1985): 14-18.

## APPENDIXES



## APPENDIX A

Breakdown of the 100 items on the TSCS into 8 categories

1. Physical Self
2. Moral-Ethical Self
3. Personal Self
4. Family Self
5. Social Self
6. Identity
7. Self-Satisfaction
8. Behavior

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## APPENDIX B

### Abbreviations used in computer analysis

ABBREVIATIONS USED IN COMPUTER ANALYSIS

V<sub>1</sub> = Physical Self

V<sub>2</sub> = Moral-Ethical Self

V<sub>3</sub> = Personal Self

V<sub>4</sub> = Family Self

V<sub>5</sub> = Social Self

V<sub>6</sub> = Identity

V<sub>7</sub> = Self-Satisfaction

V<sub>8</sub> = Behavior

C<sub>13</sub> = Physical Self/Personal Self composite score

C<sub>45</sub> = Family Self/Social Self composite score

## APPENDIX C

MANCOVA: Computer print-out

SAS

## GENERAL LINEAR MODELS PROCEDURE

DEPENDENT VARIABLE: V2

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.
MODEL	4	3041.57461411	770.39365358	16.04	0.0001	0.316937	9.6703
ERROR	182	6068.27572581	42.70616708		ROOT MSE		72.8848
CORRECTED TOTAL	186	9145.85034014			6.53499557		67.57823129

  

SOURCE	DF	TYPE I SS	F VALUE	PR > F	TYPE III SS	F VALUE	PR > F
C13	1	1935.18182453	45.31	0.0001	119.39961030	2.68	0.1039
C45	1	498.92192466	11.68	0.0008	83.35018575	1.95	0.1646
V6	1	252.58150188	5.91	0.0163	285.76812193	6.68	0.0107
SCHOOL	1	394.92936125	9.25	0.0028	398.92936125	9.25	0.0028

SAS

## GENERAL LINEAR MODELS PROCEDURE

DEPENDENT VARIABLE: V7

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.
MODEL	4	18356.24750312	4589.56187583	96.63	0.0001	0.731317	6.6052
ERROR	182	6788.74569396	42.89820911		ROOT MSE		72.8848
CORRECTED TOTAL	186	25102.99319728			6.89189405		104.34013605

  

SOURCE	DF	TYPE I SS	F VALUE	PR > F	TYPE III SS	F VALUE	PR > F
C13	1	14331.41133457	301.73	0.0001	3617.48344951	76.16	0.0001
C45	1	3522.08039429	76.17	0.0001	3731.65477636	78.56	0.0001
V6	1	472.55060201	9.95	0.0020	458.48661067	9.66	0.0023
SCHOOL	1	311.40517244	0.66	0.4175	311.40517244	0.66	0.4175

SAS

## GENERAL LINEAR MODELS PROCEDURE

DEPENDENT VARIABLE: V8

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.
MODEL	4	14749.74092012	3687.44773008	87.82	0.0001	0.712123	6.0163
ERROR	182	5942.63084319	41.99035809		ROOT MSE		72.8848
CORRECTED TOTAL	186	20712.42176871			6.47999677		107.70740399

  

SOURCE	DF	TYPE I SS	F VALUE	PR > F	TYPE III SS	F VALUE	PR > F
C13	1	11255.56486332	268.05	0.0001	3067.23174952	73.05	0.0001
C45	1	2807.75559783	66.87	0.0001	3006.73785866	71.61	0.0001
V6	1	511.23753975	12.18	0.0004	479.20201842	11.41	0.0009
SCHOOL	1	175.21093742	4.17	0.0429	175.21093742	4.17	0.0429

## APPENDIX D

SAS stepwise regression: Computer print-outs

SAS

STEPWISE REGRESSION PROCEDURE FOR DEPENDENT VARIABLE V2

THE FIRST 1 VARIABLES IN EACH MODEL ARE INCLUDED VARIABLES.

NOTE: SLENTRY AND SLSTAY HAVE BEEN SET TO .15 FOR THE STEPWISE TECHNIQUE.

STEP 0 INCLUDED VARIABLE ENTERED R SQUARE = 0.04633318 C(P) = 71.09946274

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	1	423.75630089	423.75630089	7.04	0.0088
ERROR	145	8722.09403924	60.15237268		
TOTAL	146	9145.85034014			

	B VALUE	STD ERROR	TYPE II SS	F	PRCD>F
INTERCEPT	65.89189189				
SCHOOL	3.39577934	1.27940416	423.75630089	7.04	0.0088

BOUNDS ON CONDITION NUMBER:

1, 2

STEP 1 VARIABLE V6 ENTERED R SQUARE = 0.30889104 C(P) = 14.15488881

	DF	SUM OF SQUARES	MEAN SQUARE	F	PRCD>F
REGRESSION	2	2825.07126322	1412.53563161	32.18	0.0001
ERROR	144	6320.77907692	43.89429915		
TOTAL	146	9145.85034014			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	5.55853128				
SCHOOL	3.46204357	1.09294933	340.42617528	10.03	0.0019
V6	0.47919595	0.06478771	2401.31496233	54.71	0.0001

BOUNDS ON CONDITION NUMBER: 1.000067, 8.000538



STEP 2 VARIABLE V3 ENTERED R SQUARE = 0.35680916 C (P) = 5.39720766

	DF	SUM OF SQUARES	MEAN SQUARE	F	PRCB>F
REGRESSION	3	3263.32317041	1087.77439014	26.44	0.0001
ERROR	143	5882.52716972	41.13655363		
TOTAL	146	9145.85034014			

  

	B VALUE	STD ERROR	TYPE II SS	F	PRCB>F
INTERCEPT	5.19415525				
SCHOOL	3.50022557	1.05812375	450.13941961	10.94	0.0012
V3	0.32266393	0.09885587	438.25190719	10.65	0.0014
V6	0.31256762	0.08086964	614.53250679	14.94	0.0002

BOUNDS ON CONDITION NUMBER: 1.662831, 25.95389

SAS

# STEPWISE REGRESSION PROCEDURE FOR DEPENDENT VARIABLE V2

THE FIRST 1 VARIABLES IN EACH MODEL ARE INCLUDED VARIABLES.

STEP 3 VARIABLE V4 ENTERED R SQUARE = 0.37128088 C (P) = 4.14828714

	DF	SUM OF SQUARES	MEAN SQUARE	F	PRCB>F
REGRESSION	4	3395.67935354	848.91983838	20.96	0.0001
ERROR	142	5750.17098660	40.49416188		
TOTAL	146	9145.85034014			

  

	B VALUE	STD ERROR	TYPE II SS	F	PRCB>F
INTERCEPT	6.39435125				
SCHOOL	3.30292936	1.05548614	396.539C1009	9.79	0.0021
V3	0.29486451	0.09927897	357.20938738	8.82	0.0035
V4	0.14248744	0.07881351	132.35618312	3.27	0.0727
V6	0.24352526	0.08085951	304.14937161	7.51	0.0069

BOUNDS ON CONDITION NUMBER: 2.039236, 50.69789

SAS

## STEPWISE REGRESSION PROCEDURE FOR DEPENDENT VARIABLE V7

THE FIRST 1 VARIABLES IN EACH MODEL ARE INCLUDED VARIABLES.

NOTE: SLENTY AND SLSTAY HAVE BEEN SET TO .15 FOR THE STEPWISE TECHNIQUE.

STEP 0 INCLUDED VARIABLE ENTERED B SQUARE = 0.00503761 C (P) = 403.80677274

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	1	126.45913582	126.45913582	0.73	0.3930
ERROR	145	24976.53406146	172.25195904		
TOTAL	146	25102.99319728			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	103.41891892				
SCHOOL	1.85505368	2.16502773	126.45913582	0.73	0.3930

BOUND ON CONDITION NUMBER:

1, 2

STEP 1 VARIABLE V3 ENTERED D SQUARE = 0.56149692 C (P) = 99.99046929

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	2	14095.25341656	7047.62670828	92.19	0.0001
ERROR	144	11007.73978072	76.44263737		
TOTAL	146	25102.99319728			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	9.96318076				
SCHOOL	2.12312743	1.44241509	165.61789847	2.17	0.1432
V3	1.41201402	0.10451373	13968.79428074	182.74	0.0001

BOUND ON CONDITION NUMBER: 1.000189, 8.001512

STEP 2 VARIABLE V4 ENTERED R SQUARE = 0.68282298 C(P) = 35.31266475

	DF	SUM OF SQUARES	MEAN SQUARE	F	PRCB>P
REGRESSION	3	17140.90050653	5713.63350218	102.62	0.0001
ERROR	143	7962.09269075	55.67896987		
TOTAL	146	25102.99319728			

  

	D VALUE	STD ERROR	TYPE II SS	F	PROB>P
INTERCEPT	-7.22413044				
SCHOOL	1.26611857	1.23646984	58.38118314	1.05	0.3076
V3	1.06164597	0.1014748	6146.10094792	110.38	0.0001
V4	0.61717470	0.08344761	3045.64708997	54.70	0.0001

BOUNDS ON CONDITION NUMBER: 1.290898, 21.50131

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# STEPWISE REGRESSION PROCEDURE FOR DEPENDENT VARIABLE V7

THE FIRST 1 VARIABLES IN EACH MODEL ARE INCLUDED VARIABLES.

STEP 3 VARIABLE V1 ENTERED R SQUARE = 0.70917400 C(P) = 22.83079325

	DF	SUM OF SQUARES	MEAN SQUARE	F	PRCB>P
REGRESSION	4	17802.39003966	4450.59750992	86.57	0.0001
ERROR	142	7300.60315762	51.41269829		
TOTAL	146	25102.99319728			

  

	B VALUE	STD ERROR	TYPE II SS	F	PROB>P
INTERCEPT	-14.89738969				
SCHOOL	1.49587711	1.18988042	81.25602896	1.58	0.2108
V1	0.33238509	0.09266490	661.48953313	12.87	0.0005
V3	0.87144240	0.11063468	3189.81314103	62.04	0.0001
V4	0.56583068	0.08145450	2480.92280992	48.26	0.0001

BOUNDS ON CONDITION NUMBER: 1.666415, 44.43091

STEP 4 VARIABLE V5 ENTERED R SQUARE = 0.72905730 C(P) = 13.90341900

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	5	18301.52053464	3660.30410693	75.88	0.0001
ERROR	141	6861.47266264	48.23739477		
TOTAL	146	25102.99319728			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	-21.88684097				
SCHOOL	1.15702954	1.15735450	48.21031103	1.00	0.3192
V1	0.30766640	0.09008809	562.63726680	11.66	0.0008
V3	0.70817949	0.11857516	1720.61263686	35.67	0.0001
V4	0.35604690	0.07895786	2392.31410130	49.59	0.0001
V5	0.30238349	0.09460327	499.13049498	10.35	0.0016

BOUNDS ON CONDITION NUMBER: 2.040209, 74.47198

STEPWISE REGRESSION PROCEDURE FOR DEPENDENT VARIABLE V7

THE FIRST 1 VARIABLES IN EACH MODEL ARE INCLUDED VARIABLES.

STEP 5 VARIABLE V6 ENTERED R SQUARE = 0.74525785 C(P) = 7.00000000

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	6	18708.20267358	3118.03377893	68.26	0.0001
ERROR	140	6394.79052370	45.67707517		
TOTAL	146	25102.99319728			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	-5.86781699				
SCHOOL	0.97702733	1.12783949	34.27837282	0.75	0.3878
V1	0.43304035	0.09721221	906.38647655	19.84	0.0001
V3	0.76661638	0.11703564	1959.82913111	42.91	0.0001
V4	0.65812847	0.08410600	2796.82745512	61.23	0.0001
V5	0.39177337	0.09625517	736.69377931	16.37	0.0001
V6	-0.32917741	0.11031933	406.66213895	8.90	0.0034

BOUNDS ON CONDITION NUMBER: 2.786487, 132.9323

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STEPWISE REGRESSION PROCEDURE FOR DEPENDENT VARIABLE V8

THE FIRST 1 VARIABLES IN EACH MODEL ARE INCLUDED VARIABLES.

NOTE: SLENTRY AND SLSTAY HAVE BEEN SET TO .15 FOR THE STEPWISE TECHNIQUE.

STEP 0 INCLUDED VARIABLE ENTERED R SQUARE = 0.01629077 C(P) = 336.79997402

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	1	337.42121336	337.42121336	2.40	0.1234
ERROR	145	20375.0005535	140.51724521		
TOTAL	146	20712.42176871			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	106.20270270				
SCHOOL	3.03017401	1.95544764	337.42121336	2.40	0.1234

BOUND ON CONDITION NUMBER: 1, 2

STEP 1 VARIABLE V3 ENTERED R SQUARE = 0.52008360 C(P) = 93.07717330

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	2	10772.19065118	5386.09542559	78.03	0.0001
ERROR	144	9940.23091753	69.02938137		
TOTAL	146	20712.42176871			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	25.42930678				
SCHOOL	3.26186873	1.37069054	390.92020946	5.66	0.0186
V3	1.22108401	0.09931676	10434.76963782	151.16	0.0001

BOUND ON CONDITION NUMBER: 1.000189, 8.001512

STEP 2 VARIABLE V4 ENTERED R SQUARE = 0.60267253 C(P) = 54.79477621

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	3	12482.80730201	4160.93586067	72.30	0.0001
ERROR	143	8229.61418670	57.54974956		
TOTAL	146	20712.42176871			

	B VALUE	STD ERROR	TYPE II SS	F	PRCB>F
INTERCEPT	12.54853119				
SCHOOL	2.61959252	1.25707055	249.91459370	4.34	0.0389
V3	0.95790881	0.10273102	5003.66925509	86.95	0.0001
V4	0.46253509	0.08483793	1710.61673083	29.72	0.0001

BOUNDS ON CONDITION NUMBER: 1.290898, 21.50131

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STEPWISE REGRESSION PROCEDURE FOR DEPENDENT VARIABLE V8

THE FIRST 1 VARIABLES IN EACH MODEL ARE INCLUDED VARIABLES.

STEP 3 VARIABLE V5 ENTERED R SQUARE = 0.65750035 C(P) = 30.05273835

	DF	SUM OF SQUARES	MEAN SQUARE	F	PRCB>F
REGRESSION	4	13618.42464298	3404.60616074	68.15	0.0001
ERROR	142	7093.99712573	49.95772628		
TOTAL	146	20712.42176871			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	1.18664933				
SCHOOL	2.13602571	1.17560543	164.92726247	3.30	0.0713
V3	0.69120675	0.11085425	1942.73899277	38.89	0.0001
V4	0.44209280	0.07916034	1598.16796064	31.19	0.0001
V5	0.45444405	0.09531617	1135.61706097	22.73	0.0001

BOUNDS ON CONDITION NUMBER: 1.721762, 44.15978

STEP 4		VARIABLE V1 ENTERED		R SQUARE = 0.69149137		C(P) = 15.47376660	
		DF	SUM OF SQUARES	MEAN SQUARE	F	PRCB>F	
REGRESSION		5	14322.46085981	2864.49217196	63.21	0.0001	
ERROR		141	6389.96090889	45.31887169			
TOTAL		146	20712.42176871				
		B VALUE	STD ERROR	TYPE II SS	F	PROB>F	
INTERCEPT		-5.99259626					
SCHOOL		2.40652207	1.12174636	208.55986389	4.60	0.0336	
V1		0.34416232	0.08731832	704.03621683	15.54	0.0001	
V3		0.51231660	0.11453210	900.47836358	19.87	0.0001	
V4		0.39030753	0.07653179	1178.71609462	26.01	0.0001	
V5		0.42381105	0.09111514	980.48849551	21.64	0.0001	
BCONDS ON CONDITION NUMBER: 2.040209, 74.47198							
STEPWISE REGRESSION PROCEDURE FOR DEPENDENT VARIABLE V8							
THE FIRST 1 VARIABLES IN EACH MODEL ARE INCLUDED VARIABLES.							
STEP 5		VARIABLE V6 ENTERED		R SQUARE = 0.71296519		C(P) = 7.00000000	
		DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F	
REGRESSION		6	14767.23579080	2461.20596513	57.96	0.0001	
ERROR		140	5945.16597791	42.46561413			
TOTAL		146	20712.42176871				
		B VALUE	STD ERROR	TYPE II SS	F	PRCB>F	
INTERCEPT		10.75986616					
SCHOOL		2.21827838	1.08746508	176.70094060	4.16	0.0432	
V1		0.47527658	0.09373253	1091.81613679	25.71	0.0001	
V3		0.57342905	0.11244640	1096.53224848	25.82	0.0001	
V4		0.49706296	0.08109546	1595.39090083	37.57	0.0001	
V5		0.51729368	0.09280976	1319.24198151	31.07	0.0001	
V6		-0.34424895	0.10637049	444.77493099	10.47	0.0015	

## APPENDIX E

Criterion reference tests: Computer print-out



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## GENERAL LINEAR MODELS PROCEDURE

## MANOVA TEST CRITERIA FOR THE HYPOTHESIS OF NO OVERALL SCHOOL EFFECT

H = TYPE III SSQCP MATRIX FOR: SCHOOL

E = ERROR SSQCP MATRIX

P = RANK OF (H+E) = 3

Q = HYPOTHESIS DF = 1

WE = DF OF E = 142

S = MIN(P,Q) = 1

H = -5 (ABS (P-Q) - 1) = 0.5

W = -5 (WE-P) = 69.5

WILKS' CRITERION  $L = \text{DET}(E) / \text{DET}(H+E) = 0.93302924$  (SEE RAO 1973 P 555)EXACT  $F = (1-L) / L * (WE+Q-P) / P$  WITH P AND WE+Q-P DF $F(3,140) = 3.35$  PROB > F = 0.0209PILLAI'S TRACE  $V = \text{TR}(H * \text{INV}(H+E)) = 0.06697076$  (SEE PILLAI'S TABLE #2)F APPROXIMATION =  $(2N+S) / (2M+S+1) * V / (S-V)$  WITH  $S(2M+S+1)$  AND  $S(2M+S)$  DF $F(3,140) = 3.35$  PROB > F = 0.0209HOTELLING-LAWLEY TRACE =  $\text{TR}(E^{-1} * H) = 0.07177778$  (SEE PILLAI'S TABLE #3)F APPROXIMATION =  $(2S+M-S+2) * \text{TR}(E^{-1} * H) / (S * S * (2M+S+1))$  WITH  $S(2M+S+1)$  AND  $2S+M-S+2$  DF $F(3,140) = 3.35$  PROB > F = 0.0209

ROY'S MAXIMUM ROOT CRITERION = 0.07177778 (SEE AMS VOL 31 P 625)

FIRST CANONICAL VARIABLE YIELDS AN F UPPER BOUND

 $F(3,140) = 3.35$  PROB > F = 0.0209

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## AUTOBIOGRAPHICAL STATEMENT

Born in Norfolk, Virginia, to Adna Powell Potts and Samuel Thomas Potts, Jr., the researcher is the wife of Louis F. Lee and the mother of Bret David Lee and Deems Hunter Lee. Attending Virginia Bible College, Tidewater Community College, Virginia Wesleyan College, Norfolk State University, and Old Dominion University, the researcher has earned an A.S. in Education, a B.A. in Psychology, a M.S.W. in Social Work, and has completed a program of study in the Christian education field. These educational endeavors have provided the researcher with the opportunity to hold various teaching positions in both Christian and public schools, to complete a M.S.W. internship as a public school social worker, a second M.S.W. internship as a psychiatric social worker on the children's and adolescents' units of a psychiatric hospital, and a B.A. internship as a medical social worker at a teaching hospital. Experience since completing the M.S.W. degree has included serving as family therapist and director of a counseling agency and, presently, as a school social worker in Chesapeake Public Schools. The educational experiences as well as the job exposures have presented the researcher with the privilege of becoming a member of Phi Kappa Phi Honor Society and of serving on the Pendleton Child Development Center Management Board.