8-1971

An Experimental Study of the Effects of Classroom Photography on the Self-Concepts of Culturally Disadvantaged Sixth Grade Students

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AN EXPERIMENTAL STUDY OF THE EFFECTS OF CLASSROOM PHOTOGRAPHY ON THE SELF-CONCEPTS OF CULTURALLY DISADVANTAGED SIXTH GRADE STUDENTS

by

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A Project Report
Submitted to the
Faculty of the Graduate College
in partial fulfillment
of the
Specialist in Education Degree

Western Michigan University
Kalamazoo, Michigan
August 1971

ACKNOWLEDGEMENTS

The completion of this project has been aided by the advice, encouragement, and constructive criticism of Professors Dorothy McCuskey, Kenneth E. Dickie, and Louis A. Govatos. My thanks go to them and to the other people at Western Michigan University who have helped me. Special thanks go to my wife, Phyllis, for her patience and understanding while I have been working on this project.

Donald L. Wetmore

MASTERS THESIS M-2937

WETMORE, Donald L.
AN EXPERIMENTAL STUDY OF THE EFFECTS OF CLASSROOM PHOTOGRAPHY ON THE SELF-CONCEPTS OF CULTURALLY DISADVANTAGED SIXTH GRADE STUDENTS.

Western Michigan University, Ed.S., 1971
Education, theory and practice

University Microfilms, A XEROX Company, Ann Arbor, Michigan

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I. INTRODUCTION

The Study

Purpose. This study was designed to determine whether or not the use of classroom photography for a period of six weeks could effect a measurable improvement in the self-concepts of sixth grade culturally disadvantaged students. It was also designed to determine whether race or sex have any effect on self-concept.

Rationale. It was felt that to improve self-concepts was not only intrinsically good, but that it could also lead to better academic achievement. Many methods, ranging from smiles to psychotherapy, have been used to improve people's self-concepts and productivity, and research with pictures has yielded encouraging results. While much of the research has involved using expensive equipment such as videotape units, still or movie cameras for every child, or even teams of researchers, some teachers have satisfactorily used simple cameras with black-and-white film. They have written glowing reports which appear in many journals, but most have not objectively evaluated their students' progress. Those research projects which can statistically justify claims of success have frequently lasted for a year or more. Other writers have claimed success, but without statistical support after only a month or two of classroom photography. This researcher hoped to discover a time period which would be long enough to effect demonstrable improvement, yet short enough for the average teacher to undertake by himself, without outside

help, at minimal expense. Six weeks was chosen because: (1) it is a fairly common unit length, (2) it is not so long that the experiment becomes tedious, yet it was long enough for one experimenter to claim success (Fransecky, 1969), and (3) it fitted the logistics of this research project. This study was designed to use inexpensive black-and-white snapshots, and to measure self-concept improvement with a self-concept test. The test used in the study was the Junior Inventory published by Scholastic Testing Services, hereafter referred to as S.T.S. The subjects consisted of three sixth grade classes in two inner-city "Target" schools in Kalamazoo, Michigan.

Explication of Terms

Classroom photography. In this study classroom photography meant taking pictures of children in the school setting and posting the pictures on bulletin boards in their classrooms. All pictures were in black and white and were taken by a single photographer. About twelve pictures were taken of each child and were given to the children at the end of the experiment.

Self-concept. Self-concept means many things to many people because the term relates to every facet of a given personality. Pietrofesa (1969) defines self-concept as a composite of numerous self-percepts, a hypothetical construct encompassing all of the values, attitudes, and beliefs about oneself in relation to one's environment. He feels that self-concept is formed through social interaction and is molded by one's interpretation of the reactions

of "significant others." Combs (1959) says that self-concept is a patterned interrelationship or Gestalt of all the isolated concepts of self. It is the individual as he seems from his own vantage point. Thus, from a general standpoint, self-concept is the total "feeling" that a person has about himself. For the purposes of this study, however, self-concept shall be deemed to be determined by test scores on the S.T.S. Junior Inventory.

Junior Inventory. The current Junior Inventory published by Scholastic Testing Services was formerly published by Science Research Associates as the S.R.A. Junior Inventory. The test was designed for use in grades four through eight and contains 150 questions divided into four areas: (1) About Me and My School, (2) About Myself, (3) Getting Along With Others, and (4) Things In General. It uses a semantic differential type response set with four answer choices for each item. The testee is asked to check whether each statement is a (1) Big Problem, (2) Middle-sized Problem, (3) Little Problem, or (4) No Problem for him. The test has been widely used and good reliability is claimed for it.

About Me. A second self-concept test, "About Me," by James Parker of Georgia Southern College, was also administered during the study with the intent that it be used as an alternate form of the S.T.S. test. "About Me" contains thirty questions which are divided into five areas: (1) The Self, (2) The Self In Relation To Others, (3) The Self As Achieving, (4) The Self In School, (5) The Physical Self. Each item is in the form of a positive and negative statement. For example, "I'm friendly" . . . "I'm not so friendly." The testee

is asked to rate himself on a five point numerical scale. The instrument was developed for use in sixth grade and has a test, re-test reliability of over sixty-four per cent.

Pre-tests. The term pre-tests refers to the tests which were given before any pictures were taken. This was done in Groups I, II, and III using the Junior Inventory.

Mid-tests. This term refers to the tests which were given three weeks after the pre-tests, at the mid-point of the experiment. This was done only in Groups I and II using the Parker Test.

Post-tests. This term refers to the tests which were given at the conclusion of the experiment, after all pictures had been taken. This was done in all groups using the Junior Inventory. Groups I and II were given an additional post-test with the Parker Test.

Groups. Four groups were used in the study. Groups I and II were classified as experimental groups because pictures were taken in them. Groups III and IV were classified as control groups because no pictures were taken in them. All groups came from sixth grade classes in inner city "Target" schools.

Group I. Group I was pre-tested and post-tested with the Junior Inventory, and mid- and post-tested with the Parker Test. The pictures were posted on bulletin boards in the classrooms as soon as they were developed, usually the day after they were taken, and were left on display until after the post-tests. The group itself comprised a sixth grade class of twenty-nine students. The Ss were not randomized because the classes had to remain intact.

Group II. This group was also pre- and post-tested with the

Junior Inventory, and mid- and post-tested with the Parker Test. Pictures were taken for a period of six weeks, but no pictures were shown to the group during the first three weeks of the experiment. Whereas Group I was shown its pictures for the full six weeks, Group II was shown its pictures only during the last three weeks of the study. The group comprised a sixth grade class of thirty students. The Ss were not randomized because the classes had to remain intact.

Group III. Group III was pre-tested and post-tested with the Junior Inventory, as were Groups I and II. No pictures were taken in Group III, however, and it was thus the primary control group. Group III comprised one half of a sixth grade class of thirty students. Fifteen students in the class were randomly assigned to Group III while the other fifteen were assigned to Group IV.

Group IV. Group IV was given only a post-test with the Junior Inventory. No pictures were taken in the group, and it was classified as the secondary control group. Group IV comprised one half of a sixth grade class of thirty students.

Culturally disadvantaged. For the purpose of this study the term culturally disadvantaged was applied to inner city children who attended elementary schools which had been classified as "Target" schools.

"Target" schools. This term applies to schools which are eligible to receive Title I funds under the guidelines established by the Office of Education in the United States Department of Health, Education, and Welfare. Title I funds are for educationally deprived children, and they are alloted to schools located in attendance areas

which have high concentrations of low income families.

Initial self-concepts. These were determined by scores on the Junior Inventory pre-tests.

Final self-concepts. These were determined by scores on the Junior Inventory post-tests.

Self-concept improvement. This was determined by finding the difference between the pre- and post-test scores on the Junior Inventory tests.

Initial lows. The five students in Group I, and the five students in Group II who achieved the poorest self-concept scores on the Junior Inventory pre-tests were classified as the initial lows in this study.

Photographic equipment. Two thirty-five millimeter cameras and twenty-six rolls of twenty exposure black and white film were used during the study. All developing and printing was done by the researcher in the Western Michigan University photography laboratory.

Main camera. Most of the pictures in the study were taken with a Mamiya Sekor 500 TL, which is a thirty-five millimeter single lens reflex camera.

Automatic camera. An Olympus Trip 35 was used on two occasions when the children took pictures themselves. This is a thirty-five millimeter camera with a self-adjusting aperture.

Lenses. Three lenses were used with the Mamiya Sekor, a 50 mm. normal lens, a 35 mm. wide angle lens, and a 135 mm. telephoto lens.

Film. Kodak Plus X, ASA 160, was found to be most satisfactory for all around indoor-outdoor use.

Photographs. All pictures, unless otherwise stated, were printed in wallet size, about two and one half inches by three and one half inches. Many negatives were cropped to eliminate unwanted distractors, but no artificial manipulation was done.

Portraits. The term portraits refers to photographs which show only the head and shoulders of an individual. Wallet-sized portraits were made of all students in the experimental groups.

II. RELATED LITERATURE

Self-Concept

Self-concept and human behavior. Self-concept has been generally defined as what an individual believes himself to be. Self-concept has come to be regarded as one of the major causes of peoples' actions. Morris (1969) states that rape and other crimes of violence are committed by people with poor self-concepts who seek self-approval through aggression. Combs (1959) believes that "there are literally millions of people in this world who are prisoners of their own perceptions of self." Believing that they are able to do far less than they can, they remain chained to unhappy, unproductive, and unsatisfying ways of life (p. 154). Sister Gregory (1966) has stated that "The question 'Who am I?' must be faced by every individual . . . his answer will either be the beginning of a satisfying maturation and life experience, or the beginning of a steadily depressing regression into anti-social behavior."

The human condition. David Brinkley (1970) has referred to twentieth century America as a string of filthy, poverty-ridden cities studded with islands of affluence. The pressures of overpopulation have affected all but the most isolated of communities. In his experiment with rats, Ardrey (1970) found that under overpopulated conditions, even though food was abundant, rats resorted to cannibalism, rape, and other anti-social behavior. If behavior is indeed a reflection of self-concept, then the overcrowded environment must

have severely modified the rats' self-concepts to produce such deviant behavior. That we, too, are suffering from the same conditions is epitomized by Morris' (1969, p. 11) description of man's rise to civilization:

> Imagine a piece of land twenty miles long and twenty miles wide. Picture it wild, inhabited by animals small and large. Now visualize a compact group of sixty human beings camping in the middle of this territory. Try to see yourself sitting there as a member of this tiny tribe with the landscape, your landscape, spreading out around you farther than you can see. No one, apart from your tribe uses this vast space. It is your exclusive home range, your tribal hunting ground. Every so often the men in your group set off in pursuit of prey. The women gather fruits and berries. The children play noisily around the campsite, imitating the hunting techniques of their fathers. If the tribe is successful and swells in size, a splinter group will set off to colonize a new territory. Little by little the species will spread.
>
> Imagine a piece of land twenty miles long and twenty miles wide. Picture it civilized, inhabited by machines and buildings. Now visualize a compact group of six million human beings camping in the middle of this territory. See yourself sitting there with the complexity of the huge city spreading out around you, farther than you can see.

It is easy to see that the population density in our cities has long since passed the saturation point. To millions of children the search for self is becoming increasingly difficult, the question "Who am I?" harder to answer. Fransecky (1969) noted that one migrant Negro third grader took a picture of his own shadow. When asked why, the child responded, "Because it proves I'm real."

Self-concept and the culturally disadvantaged. Much has been written about the low self-concepts of disadvantaged children. Most writers agree with Congreve (1966) that "of the many critical dimensions in which the advantaged differ from the disadvantaged, the one

that overshadows all others is the self-image or self-concept." Unfortunately, neither Congreve nor many of his supporters have done much research to substantiate their opinions. Some research indicates low self-concepts for disadvantaged children, particularly nonwhites. In the 1940's Clark (1958) found that Negro children preferred white dolls. This preference diminished with age from three to seven and was proportionate to the lightness of the child's own skin. In 1961, when this researcher first started teaching, he found that many black children would not admit that they were Negroes. In the South, Williams (1968) found Negro high school students scoring significantly below southern whites on twelve areas of the Tennessee Self-Concept Scale. Whether the Negroes were in integrated or segregated schools made no difference. Howard (1968) found that disadvantaged children, when compared to national norms of the S.R.A. Junior Inventory, had a higher concern with the area of health. Disadvantaged children checked questions regarding dizziness, sickness, headaches, stomach aches, and chest pains much more often than the norm group. In Pontiac, Michigan, in 1968, self-concept tests were given in twenty-eight schools. The schools with the lowest mean scores were also lowest in socio-economic level, academic achievement, and percentage of white students (Van Koughnet, 1969).

Not all investigators have reached the conclusion that disadvantaged children are handicapped by poor self-concepts. Howard (1968) found that despite a higher concern with health, disadvantaged children did not differ in total self-concept from national norms. This researcher noted that by 1968, black children whose older

brothers and sisters had once claimed to be Indian or Asian, were writing slogans such as "Black Power," "Black is Beautiful," and "I'm Black and Proud" on their tennis shoes and the bathroom walls. One white boy whose mother had remarried a Negro called himself black. Carter (1968) claims that Mexican-American students in a California high school scored the same as their "Anglo" classmates in "liking for self." Among educable mentally handicapped boys, Knight (1969) found that Negroes had a slightly higher self-esteem than whites. The Pannes (1963) study goes even further. He claims that lower class children had higher self-acceptance scores than middle class children, and that lower I.Q. students were more self-accepting than those with higher I.Q.'s. Along this same line, Bruce (1958) found that sixth graders who scored high in self-acceptance had less manifest anxiety than their lower scoring classmates.

This seeming conflict among research findings leads one to conjecture that part of the problem is semantic. The term _self-acceptance_ is frequently confused with self-concept. _Self-acceptance_ is based on the discrepancy between an individual's _perceived-self_ and his _ideal-self_. Since middle class children and children with high I.Q.'s tend to set higher goals for themselves, there frequently appears to be a greater discrepancy between their _perceived-self_ and their _ideal-self_. Thus, they attain lower _self-acceptance_ scores than their lower class and lower I.Q. peers. _Self-image_, _self-esteem_, _academic self-concept_, _sense of personal worth_, and _liking for self_ are other terms which are likely to confound the consumer

of research. Since there appear to be no inviolable definitions, the context in which each term is used must be examined in each research study.

Despite contradictions, the bulk of the evidence seems to indicate that disadvantaged children have traditionally had lower self-concepts and lower school achievement than middle class children. Recent movements by minority groups to achieve social, political, and economic equality appear to be having a positive effect on the self-concepts of minority group children. In many cases, however, this has not been accompanied by a corresponding rise in student achievement.

The relationship of self-concept to school achievement. The relationship between self-concept and school achievement has been established for many years. In the early 1940's in a study with poor spellers, Lecky (Combs, 1959, p. 151) found that spelling improved when self-concept improved. Carlton (1966), working with first through fourth graders, measured significant gains in reading level as self-concept improved. Sixth graders with the highest reading and math scores also had the highest self-concept scores in a study by R. L. Williams (1968). In Dyson's (1967) study, high achieving junior high students tested higher in academic self-concept than low achievers, regardless of whether they were homogeneously or heterogeneously grouped. In a study with college freshmen, Roth (1959) found that the group which improved most in reading had the highest concept of self as a reader. The group with the highest over-all grade point average had the best concept of self as a

student, while the group which dropped out of the reading program had the lowest concept of self as a self.

There are many common examples of the relationship between self-concept and achievement. A coach tries to get his team "up" for a game. A businessman gives his salesman a "pep talk." Essentially the whole field of psychocybernetics is involved in trying to modify self-concept, or rather, one particular self-percept, so that an individual believes himself capable of doing something of which he formerly thought himself incapable. The principle of "self-confidence" is valid, but it does not always work. Every ball game must have a loser, regardless of pre-game spirit. Educators, acting on the premise that raising the self-concepts of students would automatically raise their achievement, have frequently been disappointed. A research project in Pontiac, Michigan, found that even though students' self-concepts were enhanced, their achievement still remained low (Van Koughnet, 1969). Dollins (1960) was able to improve the adjustment of poorly adjusted fourth graders, but their arithmetic achievement remained the same. Thinking that attitude toward school might be a negative factor, Neale (1967) compared the attitudes of disadvantaged and middle class fourth, fifth, and sixth graders in Minneapolis and found very little difference.

In the face of such results some people have cautioned that the drive to improve the self-concepts of disadvantaged students without producing a concomitant improvement in achievement will create a group of "happy fools" who will be burdens on society when they get out of the sheltered world of the school. Their opponents argue that

happy people are better adjusted and are better able to cope with frustrations than bitter ones. An encouraging facet of the existing research is that much of it has been too short in duration to allow improved achievement to become evident. Dollins' (1960) experiment with adjustment lasted only six weeks. The Pontiac, Michigan program described by Van Koughnet (1969) had been in effect only one year. Much of the research which claims success in improving both self-concept and achievement was based on simple physical tasks or memory exercises. Learning to read is a much more complicated process than drawing a line through a maze in thirty seconds. While it may be possible to improve self-concepts in six weeks it will take much longer to produce significant improvements in reading, especially with fifth and sixth graders who may already be three or four years behind.

Though the literature concerning the relationship of self-concept to school achievement is somewhat contradictory, research has generally shown a strong association between high self-concepts and high achievement. It does not guarantee that everyone with a high self-concept will be a high achiever, but it does indicate that persons with high self-concepts have a better chance of becoming high achievers. It is logical to assume that improved self-concepts could eventually lead to improved achievement. Conversely, improved achievement could lead to improved self-concepts.

Improving Performance

Praise-blame. Based on the thesis that self-concept is a

function of the reactions of "significant others," praise has for many years been considered the key to improving performance and self-concept. Taylor (1966) found that praising the English papers of fourth graders produced a greater quantity of creative writing. Ludwig (1967) demonstrated that praise on the one hand and rebuke on the other could temporarily raise and lower respectively the self-esteem and liking for physical activities of seventh and eighth grade boys in physical education. Anderson (1966) claims that praise had a better generalized effect than reproof on the academic performance of junior and senior university females.

Not all investigations have found praise to be so effective. In the three studies above, Taylor (1966) found that both the praised and the criticized groups improved equally in quality of creative writing. Ludwig (1967) noted that though attitudes were changed, performance in gym remained the same whether praise or rebuke was used. Anderson (1966) discovered a strong trend in his data ($p > .10$) which indicated that those students who expected to do poorly performed better when reproved. Thompson's (1944) classic study in the early 1940's which showed that introverts responded better to blame was one of the first to throw cold water on the notion that praise was effective for everyone. Fisher (1968) found that college freshmen with low self-esteem and those from large families regardless of self-esteem worked better under negative reinforcement. Van De Reit (1964) got similar results with underachievers. She found that underachievers in fourth, fifth, and sixth grades improved most when reproved. They remained the same when nothing was said,

and they actually got worse when praised.

It appears that both praise and blame have positive effects on performance when properly used. Praise appears to be more effective with normal achievers and people with high self-concepts, while blame is better with underachievers and people with low self-concepts. On the surface this tendency for some underachievers to function more effectively under negative reinforcement would seem to contradict the theory that improved achievement and enhanced self-concept go hand in hand. If one accepts Combs' (1959, p. 150) claim that maximum change in self is brought about through first accepting the self as one is, the pattern fits. To tell a low achieving child that he is doing extremely well, especially if he knows that his peers are doing better, simply "does not compute" in his mind. With him it may be necessary for the egg to precede the chicken. That is, get his achievement up first, through negative reinforcement if necessary, then hope that his self-concept follows suit. Despite the evidence, many educators still believe that praise should be used exclusively, simply because it sounds more humane. Many schools have adopted policies of always being positive, praising the good and ignoring the bad. Perhaps a more effective position would be "different strokes for different folks."

Counseling and play therapy. The twentieth century has seen psychology grow from an undeveloped art to a quasi-science. The last decade has seen school guidance counselors grow from tolerated "extras" to key personnel in most school systems. Counselors have evidently proven their merit in the psycho-sociological fields, but

their efforts to improve achievement have met with only limited success. Hamachek (1968) provided an illustration of the difficulties in counseling low-achieving junior high school students. After a year of bi-weekly counseling his experimental group was actually worse than his control group in all three areas tested--self-concept, achievement, and attitude toward school. One problem with counseling is that it often requires long periods of time to produce meaningful change. Bruce (1958) investigated the level of manifest anxiety related to self-acceptance in sixth grade children who had attended special group sessions in Orientation to Self-Understanding, and found that it took two years to produce a significant improvement.

Just as counseling evolved to prominence from the psychiatrist's couch, play therapy appears to be establishing a niche in education, particularly in the elementary school. Encouraged by the success of play therapy and operating on the Rogers' rationale that changes in self-concept occur through non-directive or self-directive therapy, Carlton (1966) tested the effects of self-directive dramatizations on the reading achievement and self-concepts of culturally disadvantaged children in grades one through four. In self-directive dramatization each child chooses a character from a reading story and acts out the part. He is free to follow the text or to be the character in any way he wishes. The result is a kind of play therapy for the whole group. Carlton found significant gains in both reading and self-concepts in all four grades. These results tend to invite one to lean toward inferring that children should be allowed to work out their own hang-ups rather than being counseled, coddled, coaxed,

or cudgelled by adults.

Not every counselor is an Axline, nor every counselee a Dibbs. Most public school counselors have such heavy case loads that they do not have time for optimum effectiveness. In addition, many counselors are not sufficiently trained to handle serious psychological problems. It is probably safe to assume that very few counselors or reading teachers have the skills necessary to conduct play therapy or self-directed dramatization. But there is a simpler way to encourage non-directive therapy and to allow an individual to stand outside himself and look in--take his picture.

Pictures. We live in a multi-media world. Today's child learns far more through audio-visual media than did his parents. To him visual literacy is often more important than reading ability. No amount of words can describe an Eskimo to him as well as a picture, and no amount of words, praise, or counseling can describe him to himself as well as a picture. Since Combs (1959, p. 150) claims that self-directed therapy will produce maximal change only when an individual has accepted himself as he really is, it is imperative that an individual see himself as others view him. The best way to see oneself as others do is through moving pictures. Heen (1968) reported that video-taping teachers improved their performance more than any other kind of in-service education. Since video-taping is quite expensive, still pictures are a more practical approach to use with students. Though still pictures are not so effective as moving pictures, they can still play a role in self-concept improvement. In Gainsville, Florida, Cate (1963) and his research team

counseled and took pictures of sixth graders for a year and noted improvements in their self-concepts, personality, classroom behavior, and social interactions.

The ultimate in classroom photography is to give the children the cameras and let them take the pictures. This has been done in many places using both still and movie cameras as low as first grade. Reports of satisfied teachers are extant, but actual research with measured results is scant. One potent piece of research was done by Fransecky (1969) in a six week summer workshop for migrant Negro children in Sodus, New York. Each of fifty first, second, and third graders in the experimental group was given a Kodak Instamatic 44 camera. Using Kodak Picture Story Discovery Sets, they were shown how to arrange pictures in a sequence to tell a story, and how to caption them if they so desired. They used no reading books at all. At the end of six weeks they had made gains of five to nine months in reading level. The control group, which used regular reading books, averaged gains of two months. Though no objective measurements of self-concept were made, all of the instructional personnel felt that the children had undergone a basic transformation in personality. They had better attitudes toward school, were more verbally expressive, and seemed better adjusted.

It appears that pictures, whether still or moving, have a dramatic effect on self-concept and task performance. Pictures cover the entire definitional spectrum of self-concept. To wit: Self-concept is developed through social interaction, is a function of the reaction of "significant others," and is best changed by non-

directed therapy. In taking a child's picture, the photographer is acting as a "significant other." In the classroom, the picture itself becomes a focus for social interaction. Peers look at the picture and comment about it. The child gets feedback, non-directive. His self-image is slightly modified. The picture also allows the child to become his own "significant other." He can react to himself, not as himself, but as an observer. It is only then that the question "Who am I?" can be honestly answered.

III. THE RESEARCH PROJECT

Objectives

Introduction. Previous research had demonstrated that photography could be successfully used to improve both self-concept and performance, so the object of this project was to determine to what degree the self-concepts of sixth grade culturally disadvantaged students could be improved by having a photographer take black and white still pictures of their classroom activities for a period of six weeks. In order to further test the time factor, it was decided that two experimental groups should be used. One group would be shown its pictures for the full six weeks, the other would be shown its pictures only during the last three weeks of the experiment. It was then assumed that the six week group would improve more than the three week group. It was also assumed that students who had extremely poor self-concepts initially would improve more than students who were closer to average. Since previous research had yielded conflicting results concerning the effects of race and sex on self-concept, it was predicted that neither race nor sex would affect either initial self-concept or self-concept improvement.

Substantive hypotheses. In order to put the above predictions into a statistically analyzable framework, the following hypotheses were proposed. The Junior Inventory published by Scholastic Testing Service was selected as the instrument which would determine self-concepts.

H_1 The self-concepts of Ss whose pictures are displayed in their classrooms will improve.

H_2 The self-concepts of Ss whose pictures are displayed for six weeks will improve more than the self-concepts of Ss whose pictures are displayed for three weeks.

H_3 The self-concepts of Ss who test low initially will improve more than the mean of their respective groups.

H_4 Race will have no effect on initial self-concept.

H_5 Sex will have no effect on initial self-concept.

H_6 Race will have no effect on self-concept improvement.

H_7 Sex will have no effect on self-concept improvement.

Research Design

Description. A four group pre-test, post-test research design was chosen because it afforded opportunities to check the Hawthorne effect and the pre-test sensitizing effect. The pre-tests set a baseline and determined whether race or sex had had any effects on the Ss initial self-concepts, and they identified those which were appreciably below average. The differences between pre- and post-tests were the measure of self-concept improvement. The mid-tests, which were included in the design in order to check the Hawthorne effect, were different from the pre-tests because of the short, three-week testing intervals. Originally, the mid-tests were to be used as alternate forms of the pre-tests, but that turned out to be impossible. (See pages three and four for descriptions of the Junior Inventory and "About Me"). Two schools were used, the experimental groups in one and the control groups in the other. The following illustration gives a concise picture of the over-all design.

Illustration. The research design is illustrated below:

	Yb	(X)	Y'b	(X)	Ya Y'a	Group I (Experimental)
	Yb	(1/2X)	Y'b	(X)	Ya Y'a	Group II (Experimental)
R	Yb	(∿X)		(∿X)	Ya	Group III (Control)
		(∿X)		(∿X)	Ya	Group IV (Control)

Yb = Pre-test S.T.S. Junior Inventory

Ya = Post-test S.T.S. Junior Inventory

Y'b = Mid-test James Parker's About Me

Y'a = Post-test James Parker's About Me

(X) = Taking pictures and showing them to students

(1/2X) = Taking pictures and Not showing them to students

(∿X) = No experimental treatment

R = Random assignment to Group III or Group IV

Procedures

Arrangements. It was originally hoped that all groups could be located in one building in order to eliminate between-schools variance, but racial unrest in the community limited the choice of schools. Two inner-city "Target Area" elementary schools which ranged from thirty to forty per cent black were finally approved by the Kalamazoo Public Schools. The two experimental groups each comprised a different sixth grade class, while the two control groups together comprised a third sixth grade class.

The groups. One of the sixth grade classes at the experimental school was being taught by a young, first-year white female who was having discipline problems. The principal requested that her class be made Group I (pictures displayed for six weeks). The other class was being taught by an older, experienced black male who had good control. His class was made Group II (pictures displayed for three weeks). The control class was being taught by an experienced white male who had exceptionally good control. He randomly assigned half of his class to Group III (pre- and post-tests) and half to Group IV (post-test only), but other than the tests, the control students had nc contact with the research project.

The pre-tests. S.T.S. claims that the Junior Inventory is designed for grades four through eight. After looking the test over, however, the three teachers agreed that only half of their children would be able to read it. It was decided to pass the tests out so that each child had a copy and could follow along as the researcher read and explained the questions orally. Better readers were allowed to work on their own, but most chose to listen to the oral explanation because many of the questions were confusing. As a result, the test administrations averaged over two hours instead of the advertised thirty minutes.

The mid-tests. Three weeks after the S.T.S. Junior Inventory had been administered as a pre-test, James Parker's About Me was given as a mid-test to Groups I and II. Like the pre-test, it was read orally to the students. Remembering the two hour ordeal of three weeks earlier, many complained about taking another test, and

most appeared quite relieved when it was all over in twenty minutes, as one so aptly exclaimed, "Hell, man, I was just getting warmed up!"

The post-tests. For the post-tests, the Junior Inventory was given first, followed by Parker's Test on the next day. This time the Junior Inventory was given in two sessions with a stretch break in the middle of each session. In this manner the children were less fatigued, but a few still complained. The post-tests were given six weeks after the pre-tests to Groups I, III and IV, but they were given a week early to Group II because the teacher was called out of town. Thus Group II had pictures taken for only five weeks, and the pictures were displayed for only two weeks.

The pictures. Picture taking began as soon as the pre-tests were finished. By doing his own developing at the Western Michigan University Photography Laboratory, the researcher had full control over cropping and enlarging and was able to provide one-day service on pictures. In all, twenty-six rolls of twenty exposure, thirty-five millimeter black and white film were used, for a total of about five hundred negatives and over eight hundred wallet-sized prints.

The first pictures were individual portraits. Four were printed for each child, one for a name tag to go on his desk and three for his personal use. These were the only pictures that the students were allowed to take home before the six weeks were up. Since it was desirable to maximize longitudinal variety and minimize cross-sectional variety, a fairly standardized set of pictures was made for every individual. A picture was taken of each child in the following activities: Kicking, batting, catching, throwing,

high-jumping, long jumping, doing art work, studying at his desk, and as the center of a group. The rest of the pictures varied with individuals. In addition to being photographed, each child was also allowed to take a picture of his choice.

With the exception of the "choice" pictures, no formal attempts were made to determine whether or not a particular picture would be viewed as "pleasant" or "unpleasant" by a particular child, though obviously "bad" pictures were not shown to any children. Pictures in poor taste such as nose picking or panties showing, pictures showing failure such as missing a high jump or dropping a ball, and pictures which distorted an individual's true features were not displayed. Though the "praise" theory would argue that showing a child pictures of himself which he liked would be more beneficial to his self-concept than showing him pictures which he did not like, the pictures were not so screened for two reasons: (1) the Combs theory asserts that an individual must accept himself as he is, whether he likes it or not, and (2) it would have been virtually impossible to predetermine which pictures would please or displease a given child.

The researcher concentrated on Group I for the first two weeks, during which the children hammed continually, frequently jumping in front of the camera when he was trying to take something else. By the third week, they seemed to lose interest completely and asked him to stop taking pictures and to umpire the softball games instead. Because of the discipline problems in this group, the teacher and researcher decided to institute a good behavior contest. Each Friday they selected a boy and girl "student of the week" based on behavior

improvement. These students were given eight to ten portraits which were posted on a special bulletin board. Group II was a better disciplined, better behaved, and more cooperative class, but it, too, was given the behavior modification treatment in order to keep the groups equivalent.

Problems Encountered

Picture problems. Vanishing pictures were a constant problem in Group I. A large sheet of acetate was put over the bulletin board, but the more popular pictures still seemed to disappear. The problem was not so acute in Group II, partly because they were better disciplined, and partly because the pictures were not up for so long.

The popularity of group pictures presented another problem. Many children asked to have their pictures taken with a group of friends. The researcher originally planned to make only one print of each negative and to give it to the individual who had requested the picture, but he found that in order to avoid arguments enough prints had to be made for everyone in the picture. This saved film as one negative could provide prints of several individuals, but it made an accurate accounting of the number of pictures of each child impossible.

Another problem arose when the researcher decided to let the children take pictures themselves. Things went smoothly for about fifteen minutes. Each child took the camera, took the picture he wanted, and gave the camera to the next person. Then arguing erupted over who was next, and a fight broke out when one girl took too long.

The problem was settled by hanging the camera around the researcher's neck. Each child then led the researcher to his chosen spot and snapped his picture without removing the camera from the researcher.

Technical problems. The researcher did not face any unusual technical problems. They are listed here not because they are atypical but because they are inherent in any photographic endeavor. Lighting and choice of film were prime concerns since flash pictures were to be avoided. Both classrooms had windows on two sides, and the lighting was ample for unassisted snapshots so long as back-lighted subjects were avoided. The only place where flash was necessary was in the gymnasium. Most pictures were taken outdoors during gym class, so fast film was not usually required. Tri-X film (ASA 400) was tried first, but it was too grainy for effective enlarging. Plus-X film (ASA 160) was significantly less grainy and was still moderately effective inside. Its increased enlargability more than compensated for its slower speed. Being wider latitude, Plus X was also better for photographing racially mixed groups.

Social problems. Sixth grade girls are usually very catty and cliquish, and these were no exception. These groups had the additional problem of racial animosity. Group I was rather sharply divided into two large camps, each composed of several inseparable pairs. The black camp contained one white girl, while the white camp was all white except for one black girl who floated freely from one camp to the other. Group II was less clearly divided with the black camp being partially integrated. The white camp had a segregated core, but several white girls were accepted by either

side. The race problem was less acute with the boys. Athletic prowess appeared to be the prime determinant of in-groups and out-groups with them.

Because of the racial tensions, the researcher had to be very conscious of allowing equal time to both cliques. He discovered this rather abruptly when taking the individual portraits. He had instructed the class to pair off and stand about six inches apart in front of the movie screen. The first two pairs were white girls. He then turned to face two sullen-looking black girls. One of them demanded, "How come you took two pictures of <u>them</u> and you ain't took none of <u>us</u> yet?" On another occasion he had taken a shot of a group of black girls. In the developed print a white girl was standing at one side watching. One of the black girls very sincerely and sweetly asked the researcher, "Mr. Wetmore, could you make us some more, and this time cut that white bitch off the end?"

<u>Political problems</u>. Political conservatism presented another problem. Encouraged by local supporters of the John Birch Society, a few parents refused to allow their children to take the self-concept tests. Some of these children had negative attitudes throughout the project and their negativism affected a few of their peers. This was evidenced by the fact that more people refused to take the post-test than had refused to take the pre-test. Of fifty-nine children in the two classes, only forty-two took both tests. The climactic incident occurred after the second post-test in Group II. A white girl who did not take the test herself picked up the researcher's only copy of Parker's test and ran home with it.

Not until she was convinced that the Superintendent of Schools had approved the test, the research project, and the researcher, did the mother return the test.

IV. RESULTS

Data Analysis

S.T.S. tests. Testing the seven hypotheses called for several kinds of analysis of variance. Since there were three groups receiving different treatments, at least three analyses per hypothesis were performed on the S.T.S. tests. First a one way analysis was performed on the pre-test scores of Groups I, II, and III in order to determine whether or not they were statistically equivalent. A factorial analysis was performed on the pre-test scores of each group to determine whether race or sex had any initial effect. Another one way analysis was done on the post-tests of Groups I, II, and III to see if any significant differences had developed, and on Groups III and IV to check the pre-test sensitizing effect. One way analyses were also used to compare the post-tests to the pre-tests of each group to determine whether each had changed significantly in comparison to itself. Subtracting the pre-test scores from the post-test scores yielded improvement scores, some negative, some positive. A one way analysis of the improvement scores compared Groups I, II, and III, and another compared Groups I and II to see whether any one group had improved in comparison to the others. One way analyses were also used to compare the improvement scores of the initial lows in each group to the rest of the Ss in their respective groups. Factorial analyses were computed on the improvement scores in each group, and on the combined scores of

Groups I and II to determine whether race or sex had had any effect on self-concept improvement. Any sub-groups which showed significant improvement within its group was further tested against the control group. Table I, page 34, shows all of the relevant statistical operations performed on the S.T.S. tests.

The Parker Tests. The results of the Parker Tests disagreed somewhat with the S.T.S. tests. An analysis of the correlation between the Parker Tests and the S.T.S. tests yielded a Degree of Association that was too low ($r = .31$) for the statistical results of the Parker Test to be used as a part of the research study. The results of the statistical operations performed on the Parker tests are summarized in the Appendix, Table IV, page 53. Several other tables containing data used to compute statistical results are also located in the Appendix.

Statistical Results

Introduction. The seven original hypotheses contained both negative and positive statements. Some predicted that a change would occur, others predicted that a change would not occur. To avoid confusion over which is a null hypothesis and which is a statistical hypothesis predicting no change, the seven hypotheses are restated below in their original form, and they are retained or rejected on that basis.

Testing the hypotheses.

H_1 The self-concepts of Ss whose pictures are displayed in their classrooms will improve. Rejected

H_2	The self-concepts of Ss whose pictures are displayed for six weeks will improve more than the self-concepts of Ss whose pictures are displayed for three weeks.	Rejected
H_3	The self-concepts of Ss who test low initially will improve more than the mean of their respective groups.	Retained, I Rejected, II
H_4	Race will have no effect on initial self-concept.	Retained
H_5	Sex will have no effect on initial self-concept.	Retained
H_6	Race will have no effect on self-concept improvement.	Retained
H_7	Sex will have no effect on self-concept improvement.	Rejected

Discussion of Statistical Results

Introduction. Table I, page 34, shows that the means of Groups I, II, and III were not significantly different on the pre-tests ($F = 0.673$, $p < .05$) indicating that the groups were statistically equivalent at the outset. The table also shows that Groups III and IV were not significantly different on the post-tests ($F = 1.116$, $p < .05$) indicating that the pre-test sensitizing effect was negligible.

Hypothesis one. The major hypothesis was not substantiated statistically, indicating that the photographed Ss did not make a significant improvement in self-concept. The actual means of both groups moved in the predicted direction but not enough to be significant. A comparison of the pre-tests to the post-tests yielded the following results: Group I, $F = 0.365$, $p < .05$; Group II, $F = 0.334$, $p < .05$. An analysis comparing the improvement scores of Groups I, II and III yielded the following results: $F = 0.114$,

TABLE I

STATISTICAL RESULTS WITH THE S.T.S. JUNIOR INVENTORY

Test Used	Groups Compared	d.f.	Significance Level
Pre-test	I, II, III	2/52	F = 0.673 N.S.
Pre-test	I (M,F)	1/19	F = 0.017 N.S.
Pre-test	I (B,W)	1/19	F = 0.713 N.S.
Pre-test	II (M,F)	1/19	F = 0.659 N.S.
Pre-test	II (B,W)	1/19	F = 0.707 N.S.
Pre-test	III (M,F)	1/11	F = 0.116 N.S.
Pre-test	III (B,W)	1/11	F = 1.190 N.S.
Post-test	I, II, III	2/52	F = 0.652 N.S.
Post-test	III, IV	1/21	F = 1.116 N.S.
Pre- to Post	I to I	1/40	F = 0.365 N.S.
Pre- to Post	II to II	1/40	F = 0.334 N.S.
Pre- to Post	III to III	1/24	F = 0.702 N.S.
Improvement	I, II, III	2/52	F = 0.114 N.S.
Improvement	I, II	1/40	F = 0.049 N.S.
Improvement	I (M,F)	1/19	F = 13.758 p >.001*
Improvement	I (B,W)	1/19	F = 0.002 N.S.
Improvement	I (L,X)	1/19	F = 4.858 p >.05**
Improvement	II (M,F)	1/19	F = 0.003 N.S.
Improvement	II (B,W)	1/19	F = 0.087 N.S.
Improvement	II (L,X)	1/19	F = 1.208 N.S.
Improvement	III (M,F)	1/11	F = 0.000 N.S.
Improvement	III (B,W)	1/11	F = 4.023 N.S.
Improvement	III (L,X)	1/11	F = 1.020 N.S.
Improvement	I & II (M,F)	1/40	F = 4.676 p >.05***
Improvement	I & II (B,W)	1/40	F = 0.031 N.S.
Improvement	I & II (L,X)	1/40	F = 0.787 N.S.
Improvement	I (F) to III	1/24	F = 1.876 N.S.
Improvement	I & II (F) to III	1/21	F = 0.312 N.S.
Improvement	I (Lows) to III	1/16	F = 3.436 p >.10****

Note: Improvement = Difference between pre-test and post-test.

*Group I females improved significantly more than Group I males.
**Group I initial lows improved significantly more than Group I mean.
***I and II combined females improved significantly more than I and II combined males.
****Strong trend by Group I lows toward improving more than control group.

$p < .05$, indicating that all groups made equal improvement regardless of classroom photography.

Hypothesis two. This hypothesis was not substantiated statistically. Group I did not improve more than Group II. However, the fact remains that the initial lows and the girls in Group I improved considerably more than the Group II mean. Since neither group made a significant over-all improvement, it is statistically improbable that one would have improved significantly more than the other. A comparison of the improvement scores of Groups I and II yielded $F = 0.049$, $p < .05$.

Hypothesis three. This hypothesis was retained in Group I, but rejected in Group II. The initial lows in Group I did improve significantly more than their classmates, while the initial lows in Group II did not. A comparison of the initial lows in each group to the remaining Ss in each group yielded the following results: Group I, $F = 4.858$, $p > .05$; Group II, $F = 1.208$, $p < .05$. A further analysis comparing the improvement of the initial lows of Group I to the improvement of Group III yielded the following: $F = 3.436$, $p < .05$, but $p > .10$. Thus, the initial lows in Group I came very close to making a significant improvement in comparison to the control group.

Hypothesis four. This hypothesis was retained. Race had no effect on initial self-concept. A factorial analysis of the pretests yielded the following results concerning race: Group I, $F = 0.713$, $p < .05$; Group II, $F = 0.787$, $p < .05$; Group III, $F = 1.190$, $p < .05$. Thus, there were no significant differences between blacks

and whites on the pre-tests.

Hypothesis five. This hypothesis was retained. Sex had no effect on initial self-concept. A factorial analysis of the pre-tests yielded the following results concerning sex: Group I, $F = 0.017$, $p < .05$; Group II, $F = 0.659$, $p < .05$; Group III, $F = 0.116$, $p < .05$. Thus, there were no significant differences between males and females on the pre-tests.

Hypothesis six. This hypothesis was retained. Race had no effect on self-concept improvement. A factorial analysis of the improvement scores yielded the following results concerning race: Group I, $F = 0.002$, $p < .05$; Group II, $F = 0.087$, $p < .05$; Group III, $F = 4.023$, $p < .05$. Thus, there were no significant differences between blacks and whites in self-concept improvement.

Hypothesis seven. This hypothesis was rejected. Sex did have an effect on self-concept improvement. A factorial analysis of the improvement scores yielded the following results concerning sex: Group I, $F = 13.758$, $p > .001$; Group II, $F = 0.003$, $p < .05$; Group III, $F = 0.000$, $p < .05$. This indicates that the girls in Group I made a significantly greater improvement than the boys in that group. There were no significant differences within the other two groups. But when the scores of Group I and Group II were combined, a factorial analysis yielded another significant result: $F = 4.676$, $p > .05$. Thus, the total females in the combined experimental groups made a significantly greater improvement in self-concept than did the total males in the combined experimental groups. When these females were compared to the control group, the differences were not significant,

as the following results indicate: Group I females versus Group III, $F = 1.816$, $p < .05$; Groups I and II combined females versus Group III, $F = 0.312$, $p < .05$. Thus, the females in the experimental groups made a significantly greater improvement than the males in the experimental groups, but not significantly greater than the control group.

V. CONCLUSIONS AND IMPLICATIONS

Conclusions

From the data presented it must be concluded that six weeks was not a long enough time period for classroom photography to effect a significant improvement in the self-concepts of the sixth grade culturally disadvantaged students tested with the S.T.S. Junior Inventory in this study. That a longer time period might have been more effective is suggested by the fact that classroom photography has been used successfully in longer experiments. The fact that the females and the initial lows in Group I improved considerably more than the control group indicated that photography was having some positive effect. It is probably not overly optimistic to hypothesize that had the experiment been stretched over a ten to twelve week period, self-concept improvement would have been greater.

One major unexpected result was the fact that the control group improved as much as the experimental groups (See Table II, page 39) Groups I and II combined attained a total mean improvement score of 13.6, while Group III attained a total mean improvement score of 22.3. Thus, even if the improvement from pre-test to post-test had been significant for the experimental groups, it would also have been significant for the control groups, and the experimental groups would still not have improved significantly more than the control group. Why the control group improved so much is not known. Since

TABLE II

S.T.S JUNIOR INVENTORY IMPROVEMENT MEANS
(PRE-POST DIFFERENCES)
IN RACE-SEX FACTORIAL ARRAY

Group I				Group II			
	Black	White	Total		Black	White	Total
Male	3.4	-45.6*	-15.0	Male	5.2	17.1	12.8
Female	34.0	33.1	33.3**	Female	21.0	-1.3	12.1
Total	14.8	14.9	14.9	Total	14.7	10.4	12.4
Groups I & II Combined				Group III			
	Black	White	Total		Black	White	Total
Male	4.2	-1.7	1.1	Male	8.0	33.0	25.8
Female	25.3	23.2	24.1***	Female	6.0	24.2	18.1
Total	14.7	12.8	13.6	Total	7.0	29.1	22.3

Note: Positive values indicate improvement in self-concept scores.

*Significant deterioration by white males in Group I.
**Significant improvement by females over males in Group I.
***Significant improvement by females over males in Groups I & II combined.

it was located in a different school, it must be assumed that a different set of variables influenced it. It is possible that the fact that Group III did not take the Parker mid-tests while Groups I and II did, influenced the improvement scores. If that be true, it must be assumed that the Parker mid-tests had a deleterious effect on the final S.T.S. test scores in Groups I and II. It would be erroneous to assume that the improvement evidenced by all three groups was the result of normal maturational growth, and that the photography had no effect whatsoever, because the split that developed between males and females in the experimental groups had to be caused by something.

The significantly greater improvement of females than males was not predicted, and one can only conjecture as to why it happened. Table II, page 39, shows that three of the four sets of females in Groups I and II improved more than three of the four sets of males. The three white males in Group I actually deteriorated significantly in self-concept. The fact that each had been sent to the office for disciplinary reasons shortly before the post-test may explain their negative improvement scores, but it does not account for the other males. Since pictures are relatively glamorous it is quite possible that they appeal more to glamour-oriented people. Girls are usually more conscious of their appearance than boys. They probably spend more time in front of mirrors and are more used to seeing themselves. Thus, they may be more ready to accept themselves as they really are. Since Combs (1959, p. 150) claims that self-acceptance is prerequisite to self-directive therapy, it is possible that girls

reach the point of self-acceptance sooner than boys. After six weeks the majority of girls may have already been on the upswing, building a better self-concept, while the majority of boys had not yet adjusted to a possibly unpleasant reality.

The ages of the subjects probably interacted with self-acceptance also. At age twelve girls are maturing much more rapidly than boys, and it is quite possible that girls could be pleasantly surprised by their pictures. Twelve year old boys, on the other hand, are very unmanly looking, and their pictures could be rather disappointing. Though no statistics were kept, it appeared to the researcher that more boys than girls reacted negatively to their pictures. One boy tore his portraits up. It took three sittings to get a picture that he liked. Boys tended to make fun of one another's pictures while girls tended to compliment one another more. Boys also tended to deface the pictures with mustaches and the like, while girls tended to be protective of the pictures.

In addition to the vanity appeal of pictures, it is possible that the attentions of the male researcher affected the self-concepts of the girls. They requested that he take pictures of them more often than did the boys, and they tended to flock around him each morning to see the new crop of pictures. The researcher also noted that the girls tended to look at each picture longer, pouring over every detail, while the boys glanced quickly and moved to the next picture. Reasons notwithstanding, sex did make a difference in self-concept improvement, placing this research among a minority with similar results.

The finding that race did not affect self-concept, either initially or in improvement, would seem to be in line with current social trends. Whereas older research often found that blacks had poor self-concepts, it is probable that many of today's black youths do not have lower self-concepts than their fellow whites. This conclusion is supported by much of current research, but within the scope of this study the conclusion is based on data gathered only from children in "Target" schools, and it should not be inferred that the self-concepts of "Target Area" children, regardless of race, would be equivalent to those of middle class children, regardless of race.

The significantly greater improvement by the initial lows in Group I would seem to indicate that there is a tendency for classroom photography to be more effective with individuals who have relatively poor self-concepts than with those who are closer to average. However, since the initial lows in Group II were not similarly affected, a definite conclusion is not possible.

Another conclusion comes not from the hypotheses but from the tests. Table III below shows that the scores of the Junior Inventory and "About Me" did not correlate to a significant degree. A Degree of Association (r) of .313 would rarely be significant under any circumstances. Most linear associations usually require double that, and for the purposes of this research, triple the .313 would have been desirable. An association of r = .88 would have yielded an Index of Forecasting Efficiency (E) of 52.5%, the bare minimum acceptable for prediction purposes.

TABLE III

CORRELATION OF S.T.S. POST-TESTS WITH "ABOUT ME" POST-TESTS

Degree of Association	$r = .313$
Coefficient of Determination	$r^2 = .097$
Index of Forecasting Efficiency	$E = 4.99$*

*Indicates that there is only a five per cent chance of accurately predicting an individual score on Test B when the score on Test A is known. The Index of Forecasting Efficiency is frequently used to determine probable accuracy when an individual's score or performance level on one task is used to predict his performance on another related task. One example would be using I.Q. scores to predict scores on a math test.

Since the Junior Inventory and "About Me" did not concur to a significant degree, and since they are both listed among the better self-concept tests, it can be seen that self-concept testing is still a "soft" area. Subjectively, after administering both tests, the researcher feels that the Junior Inventory is too long for sixth graders, the vocabulary is too difficult for culturally disadvantaged students, and many of the questions are confusing even to adults. The average testing, including breaks, took over two hours. "About Me," on the other hand, took only twenty minutes. The questions are clear and concise and the vocabulary is easier, but the test lacks the checks and balances built into the longer Junior Inventory. Both tests claim high reliability and validity, but it appears that they are not measuring the same thing. Thus, more refinement is needed in the area of self-concept testing.

In summary, the following conclusions, subject to the definitions

and limitations previously described, and pursuant to the objectives of the experiment, were drawn from the study. (1) A period of six weeks of classroom photography was not sufficient time to effect a significant improvement in the self-concepts of the culturally disadvantaged children tested. (2) Classroom photography was more effective with females than with males. (3) There was a tendency for classroom photography to be more effective with individuals who had exceptionally low self-concepts initially than with individuals closer to the average. (4) Race had no effect on the self-concepts of the children tested. (5) The validity of current self-concept tests is questionable.

Implications

Several implications for future consideration may be gleaned from the present study. In his research in Gainesville, Florida, Cate (1968) found a significant improvement in self-concept after a year of classroom photography. Since the present study did not find a significant improvement after six weeks of classroom photography, the optimum level must lie somewhere between six weeks and one year.

Fransecky (1969) noted marked improvements among migrant children after six weeks of each child using his own camera. This has striking implications when compared to the present study. Fransecky's children were younger, and his purpose was to improve achievement, so the studies are not directly comparable. But there are enough similarities to suggest that the process of choosing, composing and taking a picture, and the satisfaction of seeing it when

developed, may have a greater effect on self-concept than just seeing pictures of oneself. Since Fransecky's children took pictures of one another as well as of other subjects, they had the experiences both of taking pictures and of seeing themselves in pictures. These two conditions would satisfy the Combs' followers who believe that self-acceptance must come first, and also the "praise" people who believe that a feeling of accomplishment is necessary for self-concept improvement. This should prove to be a fruitful area for future research.

The fact that the initial lows in Group I improved significantly more than the group mean, and the fact that some Ss deteriorated significantly could imply that pictures have different effects on different types of individuals. Just as praise has a negative effect on the performance of some people and a positive effect on the performance of others, pictures could well have differential effects on different types of personalities. Thus, an investigation of the effects of similar pictures on different kinds of people may be warranted.

The other side of the coin in the latter statement would be the differential effects of different pictures on the same types of personalities. The "praise" people would probably assert that a series of pictures which boosted an individual's ego would enhance his self-concept more than a series of pictures that contained some photos which deflated his ego. Though this variable was not controlled in this experiment, the hidden implication is still there. Thus, an investigation of the effects of different pictures on

similar kinds of people may be warranted.

Another implication arises from the questionable validity of current self-concept tests. It illustrates the need for more research in the area of self-concept testing. In addition to better self-concept tests, standardized norms are necessary. The tests used in the present study would have far greater utility if they were normed. In fact, the Junior Inventory was normed when it was published by Science Research Associates, but S.T.S. claims that no norms are now available. Robert Bills' Index of Adjustment and Values is highly rated and has adequate norms, but the vocabulary is too difficult for sixth grade use with culturally disadvantaged children. The area of self-concept testing could not only prove fruitful but possibly profitable for future research.

A further implication stems from the fact that several parents refused to allow their children to take the self-concept tests. Their objections ranged from "invasion of privacy" and "sensitivity training" to "Communist plot." Some school systems have buckled under the pressure and refused to allow any kind of personal or psychological testing. Though the present study was done in an exceptionally conservative area of the country, the situation is illustrative of the kinds of obstacles that education will have to face so long as the current epidemic of supernationalism and Neo-McCarthyism is rife.

A final implication may be inferred from the finding that race did not affect self-concept, that children from similar socio-economic backgrounds and similar neighborhoods had similar self-

concepts. It would be interesting to test a group of middle-class black and white children and compare the data to the present study. Perhaps the poor self-concepts that some investigators have attributed to minority group children would be found to be a function of class, not race. This is an area that deserves further study.

In summary, the present study yielded several implications which could be of interest to future researchers. (1) Better self-concept tests with standardized norms need to be developed. (2) The area of self-concept testing will probably continue to face opposition from political conservatives. (3) The interaction of race and socio-economic level and their effect on self-concept needs further investigation. (4) The period of optimum effectiveness for classroom photography to significantly enhance self-concept may be between six weeks and one year. (5) Classroom photography probably has a greater enhancing effect on self-concept when a subject is allowed to be a photographer as well as a photographee. That is, progress seems to be more rapid when each subject has a camera than when only a third party has one. (6) The effects of different kinds of pictures on different kinds of people, particularly with respect to sex, needs further investigation.

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A P P E N D I X

TABLE IV

STATISTICAL RESULTS WITH JAMES PARKER'S "ABOUT ME"

Tests Used	Groups Compared	d.f.	Significance Level	
Mid-test	I to II	1/42	F = 7.613	p >.01*
Mid-test	I (M,F)	1/21	F = 0.001	N.S.
Mid-test	I (B,W)	1/21	F = 1.264	N.S.
Mid-test	II (M,F)	1/19	F = 0.136	N.S.
Mid-test	II (B,W)	1/19	F = 0.015	N.S.
Post-test	I to II	1/42	F = 11.611	p >.001**
Mid- to Post	I to I	1/21	F = 0.434	N.S.
Mid- to Post	II to II	1/19	F = 0.765	N.S.
Improvement	I to II	1/42	F = 0.043	N.S.
Improvement	I (M,F)	1/21	F = 0.002	N.S.
Improvement	I (B,W)	1/21	F = 0.002	N.S.
Improvement	II (M,F)	1/19	F = 3.160	p >.10***
Improvement	II (B,W)	1/19	F = 0.348	N.S.

Note: Improvement = Difference between mid=test and post-test.

*Group II significantly better than Group I on mid-test.
**Group II significantly better than Group I on post-test.
***Strong trend by Group II females toward improving more than Group II males.

TABLE V

JAMES PARKER'S "ABOUT ME" MEANS
IN RACE-SEX FACTORIAL ARRAY

Mid-Test Means

	Group I				Group II		
	Black	White	Total		Black	White	Total
Male	91	81	88	Male	78	72	74
Female	93	85	88	Female	76	82	79
Total	92	84	88	Total	77	77	77*

Note: Test scores are inversely related to self-concept. High scores signify low self-concepts.

Improvement Means

	Group I				Group II		
	Black	White	Total		Black	White	Total
Male	3.0	1.7	2.6	Male	-4.0	0.3	-1.4
Female	2.0	2.7	2.5	Female	5.5	9.8	7.5**
Total	2.6	2.4	2.5	Total	1.7	4.5	3.2

Note: Positive values indicate improvement in self-concept scores.

*Group II significantly better than Group I on mid-test.
**Strong trend by females in Group II toward improving more than males in Group II.

TABLE VI

S.T.S. JUNIOR INVENTORY PRE-TEST MEANS
IN RACE-SEX FACTORIAL ARRAY

Group I				Group II			
	Black	White	Total		Black	White	Total
Male	199	185	192	Male	152	204	185
Female	228	178	189	Female	164	155	160
Total	210	179	191	Total	160	186	173
Groups I & II Combined				Group III			
	Black	White	Total		Black	White	Total
Male	179	199	189	Male	163	172	169
Female	186	171	177	Female	212	134	160
Total	182	183	182	Total	188	155	165

Note: Test scores are inversely related to self-concept. High scores signify low self-concept.

TABLE VII

TEST SCORES IN GROUP I

Type of Student	S.T.S. Pre-test	S.T.S. Post-test	Pre-Post Difference	"About Me" Mid-test	"About Me" Post-test	Mid-Post Difference
WF	69	45	24	70	72	-2
WF	84	61	23	76	70	6
WF	123	60	63	—	—	—
WF	132	83	49	79	83	-4
WF	139	89	50	75	89	-14
WF	163	190	-27	103	88	15
WF	173	154	19	93	92	1
WF	228	186	42	78	79	-1
WF	295	267	28	84	76	8
WF	372	312	60	129	109	20
BF	140	104	36	88	88	0
BF	210	202	8	114	97	17
BF	336	278	58	91	92	-1
WM	136	142	-6	—	—	—
WM	195	251	-56	85	85	0
WM	226	301	-75	78	70	8
BM	138	128	10	77	99	-22
BM	190	237	-47	76	70	6
BM	196	177	19	97	89	8
BM	221	226	-5	100	75	25
BM	253	213	40	100	95	5
WF				68	70	-2
BF				80	88	-8
WM				82	85	-3
BM				95	99	-4
MEAN	191	176	15	87.7	85.2	2.5

Note: Test scores are inversely related to self-concept. High scores signify low self-concepts in Pre-test and Post-test columns. Absolute values indicate the degree of improvement (positive integers) or non-improvement (negative integers) in the Difference columns.

TABLE VIII

TEST SCORES IN GROUP II

Type of Student	S.T.S. Pre-test	S.T.S. Post-test	Pre-Post Difference	"About Me" Mid-test	"About Me" Post-test	Mid-Post Difference
WF	81	139	-58	96	76	20
WF	123	90	33	78	73	5
WF	146	132	14	75	80	-5
WF	271	265	6	72	72	0
BF	80	88	-8	71	56	15
BF	104	101	3	84	75	9
BF	128	92	36	64	52	12
BF	140	130	10	78	64	14
BF	193	153	40	86	95	-9
BF	342	297	45	71	79	-8
WM	127	74	53	54	71	-17
WM	151	91	60	71	70	1
WM	194	142	52	81	66	15
WM	217	206	11	76	78	-2
WM	238	272	-34	—	—	—
WM	248	278	-30	—	—	—
WM	256	248	8	—	—	—
BM	113	126	-13	85	83	2
BM	154	111	43	48	61	-13
BM	170	177	-7	95	104	-9
BM	172	174	-2	81	77	4
BM				73	65	8
WM				78	81	-3
WF				91	62	29
MEAN	165	153	12	76.5	73.3	3.2

Note: Test scores are inversely related to self-concept. High scores signify low self-concepts in Pre-test and Post-test columns. Absolute values indicate the degree of improvement (positive integers) or non-improvement (negative integers) in the Difference columns.

TABLE IX

TEST SCORES IN GROUPS III & IV

Type of Student	S.T.S. Pre-test	S.T.S. Post-test	Pre-Post Difference	S.T.S. Post-test
	Group III	Group III	Group III	Group IV
WF	119	79	40	68
WF	122	75	47	78
WF	128	136	-8	79
WF	168	150	18	81
				85
BF	156	115	41	113
BF	268	297	-29	152
				162
WM	119	73	46	195
WM	124	90	34	197
WM	178	195	-17	
WM	219	165	54	
WM	220	172	48	
BM	152	168	-16	
BM	175	195	-20	
MEAN	165	147	18	121

Note: Test scores are inversely related to self-concept. High scores signify low self-concepts in Pre-test and Post-test columns. Absolute values indicate the degree of improvement (positive integers) or non-improvement (negative integers) in the Difference column.

TABLE X

TEST SCORES USED TO COMPUTE THE CORRELATION BETWEEN THE S.T.S. AND PARKER POST-TESTS

S.T.S. Post	Parker Post	S.T.S. Post	Parker Post
312	109	153	95
301	70	142	66
297	79	140	64
278	92	139	76
267	76	132	80
265	72	128	99
251	85	126	83
237	70	111	61
226	75	104	88
213	95	101	75
206	78	92	52
202	97	91	70
190	88	90	73
186	79	89	89
177	89	88	56
177	104	83	83
174	77	74	71
154	92	61	70
		45	72