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AN INVESTIGATION OF THE EFFECTS OF
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AN INVESTIGATION OF THE EFFECTS OF FEEDBACK
ON CREATIVITY AND SELF-CONFIDENCE LEVELS
OF PERFORMING ARTS MAJORS AND
NON-ARTS MAJORS

by

Howard R. Higgs

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Doctor of Philosophy

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Approved by


Dissertation Adviser

APPROVAL SHEET

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HIGGS, HOWARD R. An Investigation of the Effects of Feedback on Creativity and Self-Confidence Levels of Performing Arts Majors and Non-Arts Majors. (1975) Directed by: Dr. Nancy White. Pp. 99.

The purpose of this study was to investigate the relationship between perceived degree of creativity and self-confidence. It was hypothesized that: (1) there is a significant, positive relationship between creativity and self-confidence; (2) variations in perceived degree of creativity will be accompanied by variations in self-confidence; (3) perceived degree of creativity is a more important determinant of self-confidence for subjects majoring in the performing arts (Group A) than for subjects majoring in some non-arts area (Group NA); and (4) both creativity and self-confidence are labile constructs which can be changed by feedback.

Creativity was operationally defined as that ability measured by the Barron-Welsh Art Scale. Self-confidence was operationally defined as the personality traits measured by the Self-confidence scale of the Gough Adjective Check List (GACL).

Seventy-six female undergraduates from UNC-G were subjects in the experiment. Thirty-eight of the subjects were performing arts majors (Group A), and 38 were non-arts majors (Group NA). The subjects were pretested on the Barron-Welsh Art Scale and the GACL in a group setting, and then matched on: (1) Barron-Welsh Art Scale pretest scores; (2) GACL pretest scores; (3) age in months; and (4) grade point average. After matching, 38 pairs of subjects were formed--each pair consisting of one subject from Group A and one subject from Group NA.

The pairs of subjects were randomly assigned to either a positive treatment condition (received positive feedback about their degree of creativity) or a negative treatment condition (received negative feedback about their degree of creativity). Feedback was presented via personalized form letters. Testing and presentation of feedback were done in group settings.

There were two types of subjects and two treatment conditions, or four groups: (1) Group A+ (performing arts majors who received positive feedback); (2) Group A- (performing arts majors who received negative feedback); (3) Group NA+ (non-arts majors who received positive feedback);

and (4) Group NA- (non-arts majors who received negative feedback). After the experiment all subjects were de-briefed using both verbal and written de-briefing statements.

The data were analyzed using analyses of covariance. There were no significant main effects or interaction effects. Correlation coefficients for Groups A+, A-, NA+, and NA- between pre- and posttest scores on the Barron-Welsh and the GACL were computed. The significance of the correlation coefficients was tested using Fisher's z-transformation. Only the correlation coefficients between pre- and posttest scores on the same test were significantly different from zero. The results did not support the hypotheses, but indicated high test-retest reliability for the Barron-Welsh Art Scale and the GACL.

Explanations of the results were discussed, and recommendations for future research were made.

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TABLE OF CONTENTS

	Page
ACKNOWLEDGMENTS	iii
LIST OF TABLES	vi
LIST OF FIGURES	vii
CHAPTER	
I. INTRODUCTION	1
Purpose of the Study	1
Reasons for and Importance of the Study. . .	1
Definition of Terms.	4
Hypotheses	5
II. REVIEW OF RELATED LITERATURE	7
Creativity	7
Development of Concern in the Area	7
Nurturance of Creativity	9
Issues in the Study of Creativity.	13
Definitions of Creativity.	16
Self-Confidence.	19
Development of Concern in the Area	19
Stability-Lability of Self	20
Definitions of Self-Confidence	24
The Present Study.	26
Hypotheses	29
Definitions.	30
III. METHOD	32
Subjects	32
Apparatus.	32
Procedure.	34
Pretesting	34
Matching of Subjects	35

	Page
Posttesting	37
Debriefing and Collection of Anecdotal Data.	39
IV. RESULTS	40
Pre-experimental Matching of Subjects	40
Results of Experimental Manipulation.	44
Relationship between Creativity and Self-Confidence	52
Stability of Creativity and Self-Confidence	55
V. DISCUSSION.	57
Pre-experimental Results.	57
Results of Experimental Manipulation.	58
Hypothesis 1.	58
Hypotheses 2 and 3.	61
Hypothesis 4.	62
Explanations of the Results	62
Recommendations for Further Study	72
VI. SUMMARY AND CONCLUSIONS	74
BIBLIOGRAPHY.	79
APPENDIX A.	87
Initial Statement to Subjects	
APPENDIX B.	89
Background Information	
APPENDIX C.	91
Positive Feedback Letter	
APPENDIX D.	94
Negative Feedback Letter	
APPENDIX E.	97
Debriefing Letter	

LIST OF TABLES

TABLE	Page
1	Numbers and Percentages of Psychological Publications on Creativity for the Period 1928 to 1967 by Five-Year Intervals. 8
2	Pretest Groups and Posttest Groups and Feed-back Combinations. 28
3	Z-Score Variability for the Thirty-Eight Pairs of Subjects on the Barron-Welsh Art Scale, the GACL, Age in Months, and Grade Point Average. 41
4	Pretest Mean Scores and Standard Deviations for the Barron-Welsh Art Scale, the GACL, Age in Months, and Grade Point Average 42
5	Posttest Mean Scores and Standard Deviations for the Barron-Welsh Art Scale and the GACL. . . 45
6	Summaries of Analyses of Covariance for the Barron-Welsh Art Scale and the GACL. 51
7	Correlation Coefficients for Groups A+, A-, NA+, and NA- between Pre- and Posttest Scores on the Barron-Welsh and the GACL 54

LIST OF FIGURES

FIGURE		Page
1	Actual Pre- and Posttest Means on the Barron-Welsh Art Scale for Groups A+, A-, NA+, and NA-	46
2	Actual Pre- and Adjusted Posttest Means on the Barron-Welsh Art Scale for Groups A+, A-, NA+ and NA-	47
3	Actual Pre- and Posttest Means on the GACL for Groups A+, A-, NA+, and NA-	48
4	Actual Pre- and Adjusted Posttest Means on the GACL for Groups A+, A-, NA+, and NA-.	49

CHAPTER I

INTRODUCTION

Purpose of the Study

The purpose of this study was to investigate the relationship which may exist between creativity and self-confidence. The term self-confidence was used synonymously with such terms as self-concept, self-esteem, self-regard, self-actualization, ego-strength, and self-evaluation. For the purposes of this study, these terms were operationally defined. The variables of creativity and self-confidence have generated a tremendous amount of controversy, discussion, and research. Unfortunately, they have not produced a like amount of agreement vis-a-vis definitions, conceptual frameworks, and appropriate methods of assessment.

Reasons for and Importance of the Study

The writer chose to work in the area of creativity because of a long-standing interest in the topic. A small correlational study of creativity and intelligence, which was conducted by the writer two years earlier, solidified interest in further research in creativity. Exposure to

the work of K. J. Gergen in the area of self-presentation, as well as discussions with various faculty members, led to the inclusion of the second variable--self-confidence.

Another factor which led to the present study was an hypothesis which the writer had long held. This hypothesis was that creativity is an important personality dimension, and that--if, indeed, self-confidence is a labile entity--degree of perceived creativity should be a relatively potent determinant of self-confidence. As the planning of the study progressed, it occurred to the writer that if self-confidence is a labile personality dimension, then perhaps the no less important dimension of creativity is also labile. Thus, the investigator determined to undertake a study of the relationship between creativity and self-confidence.

A preliminary search of the literature convinced the writer that additional research in both areas was, indeed, highly justified. The literature on creativity revealed: (1) a considerable amount of speculation as to the nature of creativity; (2) many definitions of creativity; (3) considerable controversy over terminology; (4) much concern with the discovery, assessment, and nurturance of creativity; (5) many lists of the personality characteristics and

emotional needs of creative individuals; (6) numerous reports of educational and guidance programs designed to meet the special needs of creative individuals; and (7) a widespread concern about the serious lack of conditions conducive to the development of creativity. However, the writer did not find any studies in which perceived degree of creativity was treated as an independent variable.

The preliminary search of the literature also aroused the writer's interest in the construct of the self-- specifically in the controversy regarding the stability-lability of the self-concept. Numerous studies were found which presented evidence that the self-concept is indeed a relatively labile entity. This position also held intuitive appeal for the writer. At the same time, numerous studies were also encountered which indicated that self-concept is stable in nature. Further, several writers hypothesized that a flexible self-concept would be most conducive to good psychological adjustment and efficient functioning, but that Western culture had from its very beginnings reinforced the development of stable, consistent self-concepts, and punished inconsistent self-concepts and behavior.

There appeared to be a real need for further research in both areas. The status of the self vis-a-vis stability-

lability appeared to be unresolved and the writer felt that further research in this area would be of value and importance. The writer's failure to find reports of research in which perceived degree of creativity was used as a treatment variable, and actually manipulated, indicated that a study in which perceived degree of creativity was so used would be of real importance. Further, while level of self-confidence has been manipulated by feedback on a variety of dimensions (performance on physical fitness tests, results of personality testing, results of vocational testing, academic failure), there was no evidence in the literature of any attempt to manipulate self-confidence via feedback regarding degree of creativity. There appeared to be a need for more research in both areas, and the writer believed that the present study would not only be a valuable, but also a unique, addition to the literature.

Definition of Terms

Because of the definitional and measurement problems adhering to both the construct of creativity and the construct of self-confidence, it was decided that the research would be facilitated by operationally defining both constructs. Thus, creativity was defined as that ability

which is measured by the Barron-Welsh Art Scale. Self-confidence was defined as that aggregate of personality characteristics which is measured by the self-confidence scale of the Gough Adjective Check List.

Hypotheses

The following hypotheses were stated and investigated.

Hypothesis I

There is a significant ($p \leq .05$), positive relationship between creativity and self-confidence.

Hypothesis II

Variations in perceived degree of creativity will be accompanied by variations in level of self-confidence.

Hypothesis III

Perceived degree of creativity is a more important determinant of self-confidence for subjects who are majoring in some area of the performing arts than for subjects who are majoring in some area other than the arts.

Hypothesis IV

Both creativity and self-confidence are labile entities, which can be manipulated by feedback.

CHAPTER II

REVIEW OF RELATED LITERATURE

Creativity

Development of Concern in the Area

Creativity has been an area of concern which has, until recently, been primarily the domain of philosophers and almost totally neglected by scientists. It is "an area in which psychologists generally, whether they be angels or not, have feared to tread" (Guilford, 1950, p. 444). In partial support of this contention, Guilford (1970) provided the data which are found in Table 1. This table gives both the numbers and the percentages of psychological publications on creativity. The table covers the period from 1928 to 1967 by five-year intervals. The following salient points with regard to Table 1 should be noted: (1) there were approximately six publications on creativity per year for the 1930 interval, while there were 95 publications on creativity per year for the 1965 interval; (2) the percentage of articles on creativity was approximately one-tenth of 1% up to 1955; (3) by 1965, this percentage had risen to seven-tenths of 1%; and (4) in 1969, the percentage of articles

on creativity had risen to 1.4% (Guilford, 1970). Although slow in starting, a considerable momentum has developed in the area of creativity. This momentum should not only continue, but also accelerate (Guilford, 1967).

Table 1

Numbers and Percentages of Psychological
Publications on Creativity for the
Period 1928 to 1967 by Five-Year
Intervals

Midyear	Total Number	On Creativity	Percent on Creativity
1930	24,067	29	12
1935	30,494	40	13
1940	30,043	62	26
1945	21,392	34	16
1950	34,324	43	13
1955	43,931	53	12
1960	41,317	177	43
1965	66,314	474	71

Various other writers have commented on this increasing concern. Bennett, Doppelt, and Madans (1969) interpreted both attempts to train individuals to function more creatively and the proliferation of techniques for assessing creativity as evidence of increased interest in the area of creativity. Guilford (1950) noted the following indications of ever-increasing concern with the definition, identification, and development of creativity: (1) research

centers have proliferated (i.e., Aptitudes Research Project at the University of Southern California, Institute for Personality Research and Assessment at the University of California at Berkeley, the Creativity Research Institute of the Richardson Foundation, Inc.); (2) the establishment of the Creative Education Foundation, which publishes the only journal devoted exclusively to creativity, the Journal of Creative Behavior; (3) the increased interest of government and industry in discovering and developing creative ability; and (4) the increased concern with creativity shown by educational institutions.

Nurturance of Creativity

To be sure, the emphasis on the development of educational procedures conducive to creative functioning, and the emphasis on the facilitation of creative functioning has not been misplaced. Numerous writers have lamented the dearth of stimuli for creative functioning in American culture and have indicated the urgent need to nurture carefully creative ability. Wolf (1957) indicated that just as plant life must be carefully cultivated, so must an individual's creativity. Chew (1959) urged the establishment of the conditions which are essential to the full

development of gifted children--even though this would necessitate the alteration of many deeply ingrained attitudes and procedures.

Broadus (1959) reported that less than 5% of the high school age population is exceptional in a negative sense (emotionally disturbed, retarded), while 30% of this population is exceptional in a positive sense (creative, intellectually above average). He further noted the staggering array of special services (special classes, special schools, social workers, psychologists) available for the negatively exceptional 5%, and the dearth of special services available for the positively exceptional 30%. This type of imbalance exists even in times such as the present when the cultivation of creative, productive, independent thinkers is essential for both individual and group survival (Pepinski, 1960).

As work in the area of creativity has accelerated, it has become more obvious that the development of creatively gifted individuals cannot be left to chance. Witty and Lehman (1927) indicated that innate capacity was insufficient to guarantee a creative adult. They argued that society must also provide stimuli which would motivate the gifted individual to high levels of achievement.

Quite recently, the most widely accepted notion was that creative development had to be left to chance. In fact, many people still hold this belief (Torrance, 1962). Torrance (1963) pointed out that creative development needs careful guidance and encouragement. In the same vein, Bixler (1961) observed that given enough time, children almost always adjust to mediocrity.

Succinctly, society should reward creative efforts whenever they occur and however they are manifested. Roeper (1963) observed that creativity is an asset, but if unrewarded, this asset can become a liability. Maslow (1963) stated that society must begin producing people who can reward creativity--people who have no need to freeze the world and render it stable, but who can be comfortable with change and innovation.

It has been noted that certain ethnic groups have produced a disproportionately high percentage of creative individuals (Adler, 1963). Adler stated that the percentage occurred simply because creativity was rewarded by these groups. He further indicated that these findings have important implications for attitudinal changes in American culture.

In spite of the clear evidence, society has continued to reward conformity and even punish creativity. Perhaps this failure to reward and encourage creativity is a function of the long history of many attitudes toward and beliefs about the gifted. Adler (1961) indicated that many of the attitudes of Western culture toward the gifted have been negative in nature (i.e., the creative have been viewed with suspicion and envy; they have been characterized as insane, egg heads, ivory tower thinkers, dreamers, eccentric, immature, unstable). He further noted that society appears to have a strong tropism toward the average.

Barbe (1958) offered three answers to the question of why the creative have gone unrewarded for so long: (1) he indicated that people tend to distrust anything or anyone they do not understand; (2) he noted the American desire to be as much like the average as possible; and (3) he also cited the widespread belief that the mere fact that an individual is gifted means that he can take care of himself.

Scientific concern with the general area of creativity arose only recently, and until very recently has progressed quite slowly. In spite of the tremendous increase in activity in the area since 1950, investigators still possess few, if any, uncontested facts about creativity.

Issues in the Study of Creativity

Getzels and Jackson (1962) offered some possible explanations for the problems surrounding creativity, including the following: (1) there is a variety of unanswered questions about creativity--What is its nature? Can creative potential be detected before creative achievement? What effects does family environment have on creative development? What are the relationships between creativity and personality? What are the relationships between creativity and intelligence? (2) the IQ score has come to be regarded as the critical criterion on which persons are evaluated, sorted, and given or denied preferment; and (3) the fact that the pioneering work of Lewis B. Terman, its inestimable contributions notwithstanding, firmly established the equation of giftedness and high IQ scores as the model for further work in the area of creativity--and this eventually stymied further progress.

Damm (1970) noted another point of contention. He recommended that education de-emphasize future success (defined in terms of intelligence), and instead strive to affect curriculum reforms that would maximize the individual's ultimate psychological health and self-actualization. It was his premise that the self-actualizing drive--and the

factors that impinge upon it--is a crucial determinant of creativity. He indicated that there is a dearth of studies which address themselves to the relationship between self-actualization and creativity, and that research efforts would be most fruitful if so directed.

Other investigators have advanced a variety of conceptualizations of the problem of creativity. Welsh (1971) proposed the existence of two independent dimensions of personality, each subsuming two levels (high and low), which offer a model for tying together personality characteristics, vocational interests, and intellectual performance. He labeled the first parameter "origence." High origence people prefer an open, diffuse, subtle, and implicit task, while low origence people prefer an organized, well-structured, obvious, and explicit task. The second parameter is "intellectence." The individual who rates high in intellectence favors an abstract, conceptual approach, while the individual who rates low in intellectence favors a concrete and literal experience.

Obviously, there are four possible combinations, and Welsh has postulated some of the characteristics of individuals falling within each category as follows: (1) high origence-low intellectence--extroverted, prefer social

situations that are not intellectually demanding, describe themselves using such terms as adventurous, easy-going, pleasure-seeking, and talkative; (2) high origence--high intellectence--introspective, aloof, self-centered, prefer open-ended, unstructured tasks, like imaginative solutions to problems, describe themselves as complicated, disorderly, original, and unconventional; (3) low origence--low intellectence--extroverted, prefer routine tasks, tangible matters, prefer regular, orderly, and systematic approaches to problems, describe themselves as appreciative, energetic, friendly, and practical; and (4) low origence--high intellectence--efficient, logical, methodical, introspective, prefer difficult tasks that can be solved by systematic application of rational procedures derived from conceptions and abstractions, prefer to follow rules and regulations in problem solving.

Callaway (1969) advocated a marked departure from the studies so far cited. He maintained that the scientific community had almost totally accepted the factorial approach to the study of creativity, which had resulted in a focusing on isolated cognitive abilities. He recommended a holistic approach which focused attention on the value systems, attitudes, and interests which form the integrating core of

the personality. He stated that the affective and conative aspects of personality are as essential to useful creativity as are cognitive aspects of personality. It was his position that anecdotal and biographical methods of research have been neglected, when, in fact, they are potentially powerful tools in advancing the understanding of creativity.

Definitions of Creativity

No discussion of creativity would be complete without noting the definitional problems of the area. As with any other complex human characteristic, there is almost no agreement on the definition of creativity, or even the criteria of creative behavior. Indeed, the area of creativity has spawned a vast number of definitions, varying in degree of complexity as well as in degree of overlap. The following are representative of some of the many definitions encountered:

Creative ability is marked by the initiative which one evidences by his power to break away from the usual sequence of thought into an altogether different thought . . . Frequency of spontaneity in thought is the true measure of a person's creative capacities . . . Creative ability is evidenced in one's tendencies to abandon old unfruitful paths for others. A searching type of mind, a combing mind, a synthetic mind is what we are looking for. (Simpson, 1922, p. 235)

Guilford (1950) elaborated the following specific hypotheses concerning creative abilities:

- 1) Sensitivity to problems.
- 2) A fluency factor (or factors) in creative talent: ". . . the person who is capable of producing a large number of ideas per unit of time, other things being equal, has a greater chance of having significant ideas."
- 3) Novelty of ideas: "The degree of novelty of which the person is capable, or which he habitually exhibits . . ."
- 4) flexibility of mind: "The ease with which the individual changes set."
- 5) Synthesizing ability: "Much creative thinking requires the organizing of ideas into larger, more inclusive patterns."
- 6) Analyzing ability: "Symbolic structures must often be broken down before new ones are built."
- 7) Reorganization or redefinition factor: "involves the reorganization or redefinition of organize wholes."
- 8) Complexity factor: ". . . has to do with the degree of complexity or of intricacy of conceptual structure of which the individual is capable. How many inter-related ideas can the person manipulate at the same time?"
- 9) Evaluation: "Creative work that is to be realistic or accepted must be done under some degree of evaluative restraint."
(pp. 451-453)

MacKinnon (1962) suggested that,

True creativeness fulfills at least three conditions: (1) it involves a response or an idea that is novel or at the very least statistically infrequent; (2) it must to some extent be adaptive to, or of, reality. It must serve to solve a problem, or accomplish some recognizable goal; and (3) true

creativeness involves a sustaining of the original insight, an evaluation and elaboration of it, a developing of it to the full. Creativity, from this point of view, is a process extended in time and characterized by originality, adaptiveness, and realization. (p. 458)

Maslow (1962) made a distinction between "special talent creativeness" and "self-actualizing creativeness."

The latter is characterized by expression in mundane matters of life, spontaneity, expressiveness, freedom, uninhibited behavior, easy expression of ideas and impulses, happiness, security, effortlessness, a lack of fear of the unknown, a strong attraction to the strange or novel. (pp. 137-138)

The concept of creativeness and the concept of the healthy, self-actualizing, fully-human person seem to be coming closer and closer together, and may perhaps turn out to be one and the same thing. (Maslow, 1963, p. 4)

To be gifted implies an ability to learn quickly, to remember easily, to understand clearly with a minimum of explanation. A superior mind is like a large sponge, it is able to absorb a much greater quantity of material. And, if it is given enough to saturate it, it may return it in a creative way. (Krug, 1960, p. 96)

Leuba (1958) indicated that the essentials of creativity are:

- 1) . . . changing what is there into something else.
- 2) Creativity involves the use, or even the destruction, of what is present and the development of something new out of it. (p. 134)

Suchman (1962) posited that creative thinking has two defining characteristics:

- 1) It is autonomous--it is neither random nor controlled by some fixed scheme or external agent, but is wholly self-directed.
- 2) It is directed toward the production of a new form. (p. 95)

Both giftedness and talented refer to a child who consistently performs at an outstanding level over a period of time in one or more fields of endeavor. (Carlson, 1962, p. 100)

Self-confidence

Development of Concern in the Area

The area of self-confidence is as complex and problematic as the area of creativity. A multiplicity of terms (self-esteem, self-concept, ego-strength, self-actualization, self-confidence) has been defined, and used, in almost as many different ways as there are writers. These terms have often been used either synonymously or in an overlapping fashion. There has been a vast array of theoretical statements, conceptual frameworks, definitions, and approaches to assessment.

As with creativity, the concept of self may be viewed as having a long past, but a short history. As recently as

1927, there existed a very real controversy as to whether the self was a member of the scientific community or the philosophical community. Calkins (1927) noted that some of the arguments against admitting the self into the domain of psychology included: (1) the view that the self is a metaphysical--not scientific--concept; (2) the concern that the notion of a permanent self would lead to a purely idealistic psychology; and (3) the fear that if psychology were to embrace the concept of self, it would be paying a very high price for a very small return.

Stability-Lability of Self

A crucially important controversy in self psychology revolves around the stability-lability of self issue. Is one's self-concept relatively stable or labile? Is the self-concept a fixed, inflexible, change-resistant entity, or is it flexible, alterable, and, indeed, constantly changing?

For years, most researchers held the view that the self-concept not only was, but also should be, a highly change-resistant, very stable, permanent structure. Indeed, a highly organized, stable self-concept was viewed as a much-to-be-desired goal. The degree of stability or

lability of the self-concept was believed to be highly correlated with the degree of mental health. Some definitions of self-concept actually include the word "stable," or some cognate of it (Snygg and Combs, 1949).

Carlson (1965) reported a longitudinal study involving adolescents which yielded results that support the view of self-concept as a relatively stable parameter of personality. Bertocci (1945) declared that the self was a unique unity, always striving to preserve its own style and mode of adjustment. Outside forces could influence or even coerce the self, but it, nevertheless, continually sought to maintain its uniqueness and stability. Rogers (1947) posited that psychological adjustment was achieved only when one had successfully organized all his self-perceptions into a conscious concept of self. Parker (1966) reported research results which indicated that self-concept remained consistent under a variety of experimental conditions.

Brownfain (1952) noted that the individual possesses many selves: the self he honestly believes he is; the self he desires to be; the self he believes others to perceive him to be; the self he hopes he currently is; and the self he fears he currently is. He posited that the self-concept

is a stable constellation of these various selves. Brown-fain further indicated that stability of self-concept was positively correlated with good psychological adjustment.

Strong and Feder (1961) in their review of assessment techniques, stated that every remark an individual makes about himself should be considered a sample of his self-concept. They further indicated that everyone not only possesses a multiplicity of self-concepts, but also a relatively stable or consistent hierarchy of selves.

Recently, there has been a marked trend to re-assess this traditional view. Gergen (1972) reported a series of studies which led him to question many of the traditionally accepted assumptions. He contended that under normal conditions a person does not develop a cohesive self-concept, and that it is actually extremely debilitating to do so. This research indicated that the normal self-concept is astonishingly flexible. Gergen indicated that cultural and societal structures and expectations reward the individual who develops a unidimensional, or coherent, self-concept. However, he viewed this one-dimensionality as diametrically opposed to the fundamental nature of the self-concept, which is multi-dimensional and many faceted. In reinforcing rigid self-concepts, society has also encouraged mental discomfort, if not actual mental illness.

Also supportive of the concept of a plurality of selves are Akeret's (1959) remarks. He indicated that the gestalt approach which emphasized unity is apparently an inappropriate way of viewing the individual's self-concept. The self-concept is not a unified entity, but rather is a constellation of a variety of characteristics or dimensions. Further, the individual values these characteristics and dimensions differently.

Bramel (1962) experimentally induced changes in subjects' self-esteem, thus supporting the position that self-esteem is indeed a flexible entity. A number of other researchers have reported successfully changing subjects' self-concept through the use of various experimental manipulations (Bishop, 1973; Gergen, 1971; Gergen and Bauer, 1967; Gergen and Taylor, 1969; Gergen and Whishnov, 1965; Haas and Maeher, 1965; Jones and Ratner, 1967).

It would appear that at the present time there is ample support for both the stability hypothesis and for the lability hypothesis. Of course, it is quite possible that this issue will eventually come to be viewed not as a matter of controversy, but as a matter of collaboration. It is the opinion of the present writer that the latter view will prove to be the most accurate and helpful.

Definitions of Self-Confidence

One major problem in the study of the self has been that of terminology, and a closely related difficulty has been that of defining the construct. Over the years many definitions have been advanced, but as yet no one definition has been accepted by the majority of workers. The following represent some of the many definitions encountered.

There is no single, united self at the core of our being. We are many persons in a house divided. The basis of many conflicts and much frustration is in this universal circumstance, that no man ever fuses all his self-reactions together into a single, unambiguous, coherent whole. (Cameron, 1947, p. 102)

The self is essentially a social structure, and it arises in experience. After a self has arisen, it in a certain sense provides for itself its social experiences, and so we can conceive of an absolutely solitary self. But it is impossible to conceive of a self arising outside of a social experience. (Mead, 1955, p. 140)

By self-evaluation we mean the individual's statements that place his perceived attributes on one or more scales along a positive-negative dimension. (Israel, 1960, p. 37)

Self-concept is both a learned perceptual system functioning as an object in the perceptual field, and a complex organizing principle which schematizes ongoing experience. (Lowe, 1961, p. 325)

Lowe (1961) noted the following definitions which have been concurrently used by different theorists:

- 1) There is the knowing self of structural psychology. Its function is to apprehend reality.
- 2) The second construction of the self is that of motivator. This is the self of thinkers who believe that the individual is motivated by a need for self-assertion or self-actualization, by realizing those potentialities which inhere within the self.
- 3) The third construct of self is the humanistic semi-religious conception of the self as that which experiences itself.
- 4) The fourth approach views the self as organizer. This self is the psychoanalytic ego; the internal frame of reference.
- 5) A fifth approach constructs the self as pacifier. The organism seeks to keep tensions to a minimum. The self in other words is seen as an adjustment mechanism which seeks to maintain congruence between the self and the nonself.
- 6) In the sixth view of the self, the self is the subjective voice of the culture, being purely a social agent. It is the self of both sociology and S-R psychology, for it sees behavioral responses solely in terms of social conditions or stimuli inputs. The self as an entity is denied, and behavioral consistency is seen as residing not in the individual but in similar environmental agents. (pp. 333-334)

Self-esteem is a positive or negative attitude toward a particular object, namely the self. (Rosenburg, 1965, p. 30)

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. A person's self is the 'sum total of all that he can call his.' The self includes, among other things, a system of ideas, attitudes, values, and commitments. The self is a person's inner world as distinguished from the 'outer world' consisting of all other people and things

. . . It is both a knower and a thing that is known, a perceiver and a thing perceived. As a knower, the self is able to take a 'panoramic view of the total personality'
 . . . The self is both constant and changeable
 . . . It provides a 'neucleus on which, and in which, and around which experiences are integrated into the uniqueness of the individual.
 (Jersild, 1952, pp. 9-10)

Wiley (1961) indicated that the term self has been used in two main ways, "The self as subject or agent, and the self as the individual who is known to himself. The words 'self concept' have come into common use to refer to the second meaning" (p. 1).

The Present Study

Two such complex and controversial personality variables present a large number of possible hypotheses and experimental approaches. However, this study addressed itself to young adults (college freshmen and sophomores falling within the approximate age range of 18 to 20 years). For pretesting, there were two groups of subjects: (1) students who were majoring in some area of the performing arts (Group A); and (2) students who were non-arts majors (Groups NA). After the pretesting session, the subjects were randomly assigned to either positive or negative feedback treatment regarding their degree of creativity. The

feedback was in the form of personalized form letters, which supposedly were based upon scores obtained on the Barron-Welsh Art Scale and the Gough Adjective Check List. Thus, for the experiment proper, there were four groups of subjects, as shown in Table 2. To facilitate further exposition and discussion, the groups of subjects will be referred to as either A+, A-, NA+, or NA-, as indicated in Table 2.

The study was limited to describing the concomitant variations in degree of creativity and level of self-confidence. The following specific points were considered: (1) determining the validity of the assumption that there is a positive relationship between creativity and self-confidence; (2) assessing the hypothesis that the nature of this relationship is such that variations in degree of creativity as perceived by the subject will be accompanied by variations in self-confidence; (3) examining the idea that perceived creativity is a more potent determinant of self-confidence for performing arts majors than for non-arts majors; and (4) investigating the hypothesis that creativity and self-confidence are both quite flexible, labile entities, which are susceptible to change.

Table 2

Pretest Groups and Posttest Groups
and Feedback Combinations

PRETEST GROUPS

GROUP A
Subjects who were
majoring in some
area of the per-
forming arts.

Group NA
Subjects who were
majoring in some
area other than
the arts.

POSTTEST GROUPS

- | Group A+ | Group NA+ |
|---|---|
| 1. Performing arts majors--
Perceived degree of crea-
tivity is an important
determinant of self-
confidence. | 1. Non-arts majors--
Perceived degree of crea-
tivity is a minor deter-
minant of self-confidence. |
| 2. Positive feedback. | 2. Positive feedback. |
| Group A- | Group NA- |
| 1. Performing arts majors--
Perceived degree of crea-
tivity is an important
determinant of self-
confidence. | 1. Non-arts majors--
Perceived degree of crea-
tivity is a minor deter-
minant of self-confidence. |
| 2. Negative feedback. | 2. Negative feedback. |
-

Hypotheses

1. There is a significant ($p \leq .05$), positive relationship between creativity and self-confidence as indicated by:
 - 1) A significant ($p \leq .05$) increase in scores from pre- to posttests on both the Barron-Welsh Art Scale and the GACL for the subjects for whom perceived degree of creativity is a very important determinant of self-confidence, and who receive positive feedback vis-a-vis degree of creativity (A+).
 - 2) A significant ($p \leq .05$), but smaller, increase in scores from pre- to posttest on both the Barron-Welsh Art Scale and the GACL for the subjects for whom perceived level of creativity is relatively unimportant in determining self-confidence, and who receive positive feedback vis-a-vis degree of creativity (NA+).
 - 3) A significant ($p \leq .05$) decrease in scores from pre- to posttest on both the Barron-Welsh Art Scale and the GACL for subjects for whom perceived degree of creativity is a very important determinant of self-confidence and who receive negative feedback vis-a-vis degree of creativity (A-).

- 4) A significant ($p \leq .05$), but smaller, decrease in scores from pre- to posttest on both the Barron-Welsh Art Scale and the GACL for the subjects for whom perceived level of creativity is relatively unimportant in determining self-confidence, and who receive negative feedback vis-a-vis degree of creativity (NA-).
2. Variations in perceived degree of creativity will be accompanied by variations in level of self-confidence.
 3. Perceived degree of creativity is a more important determinant of self-confidence for As than for NAs.
 4. Both creativity and self-confidence are labile entities which can be manipulated by feedback.

Definitions

1. CREATIVITY. To facilitate investigation of the above stated hypotheses, creativity will be operationally defined as that ability which is measured by the Barron-Welsh Art Scale.
2. SELF-CONFIDENCE. This variable will be operationally defined as that aggregate of personality characteristics which is measured by the Self-Confidence scale of the Gough Adjective Check List.

3. A+. Subjects for whom perceived degree of creativity is an important determinant of self-confidence and who receive positive feedback.
4. A-. Subjects for whom perceived degree of creativity is an important determinant of self-confidence and who receive negative feedback.
5. NA+. Subjects for whom perceived degree of creativity is a minor determinant of self-confidence and who receive positive feedback.
6. NA-. Subjects for whom perceived degree of creativity is a minor determinant of self-confidence and who receive negative feedback.

CHAPTER III

METHOD

Subjects

Seventy-six female students from the University of North Carolina at Greensboro were subjects in the experiment. Half of the subjects were majoring in some area of the performing arts, and constituted Group A. The remaining subjects were majoring in some other area than the arts, and constituted Group NA. Thus, initially there were two groups of subjects--Group A and Group NA (see Table 2). The majority of the subjects were freshmen and sophomores, although a few were juniors. The approximate age range of the subjects was 18 to 20 years.

Apparatus

The Barron-Welsh Art Scale. This scale consists of 86 items gleaned from the 400-item Welsh Figure Preference Test (WFPT). The WFPT consists of black and white figures which include a variety of geometric forms and patterns and designs of varying degrees of complexity (Welsh, 1959). This test has a variety of advantages such as: (1) it presents a simple task which does not demand a great deal of concen-

tration or effort; (2) the response required is very simple (the testee simply indicates whether he likes or does not like each figure); (3) the test is suitable for a wide age range (childhood through adulthood); (4) scoring is totally objective; and (5) the test may be used in group settings as well as individually.

Raw scores on the Barron-Welsh Art Scale are converted to t-scores using the formula: $10(X-M/SD) + 50$ (Welsh, 1959). For the sample of subjects used in this study, the mean was 42.97, and the standard deviation was 14.62. Thus, the lowest possible t-score for this sample was 20.61, and the highest possible t-score was 79.43. It should be noted that researchers who have used the Barron-Welsh Art Scale have usually taken a t-score of approximately 35 as a cut off point. That is, individuals who obtain scores above 35 have been considered to be quite creative, while those who obtain scores below 35 have been considered to be less creative.

The Gough Adjective Check List (GACL). The GACL consists of 300 alphabetically arranged adjectives. The testee simply checks those adjectives which he believes to be descriptive of himself. The entire check list was administered, even though the study utilized only the Self-

confidence scale. GACL raw scores were converted to standard scores utilizing tables provided in the manual. On the Self-confidence scale, the lowest possible standard score is 6, and the highest possible standard score is 99.

Feedback Letters. Personalized form letters were used to supply feedback to the subjects. The letters supposedly were based upon the results of the pretesting session, and were different only in that one reported negative results and one reported positive results (see Appendix C and Appendix D).

Procedure

Pretesting. The subjects were pretested in three different groups, during regularly scheduled class periods. The three groups consisted of: (1) a class of dance majors; (2) a class of music majors; and (3) a class of non-arts majors enrolled in a course in child development. One-hundred-fifty-one students were pretested, and even though these students were pretested at three different times, they all received exactly the same pretest treatment. The pretesting yielded 92 subjects who were majoring in the performing arts, and who constituted the group (A) for which perceived degree of creativity was hypothesized to be a very important determinant of self-confidence. It also

yielded 59 subjects who were not majoring in the performing arts, and who constituted the group (NA) for which perceived degree of creativity was hypothesized to be a relatively unimportant determinant of self-confidence.

The pretest procedure for all subjects was conducted in the following manner. The experimenter introduced himself as a professor of Psychology and Education at Bennett College, and explained that he was collecting data for a research project on creativity (see Appendix A). The subjects then completed a brief information sheet (see Appendix B), the Barron-Welsh Art Scale, and the GACL. The order of the presentation of the two tests was randomized to avoid any possible effects of testing order on the results obtained. At the conclusion of the pretest session, the subjects were informed that the experimenter would meet with them again in approximately two weeks to interpret to them the results of the study.

Matching of Subjects. Upon completion of the pretesting, Group A and Group NA subjects were matched on the following variables: (1) Barron-Welsh Art Scale scores; (2) GACL scores; (3) age in months; and (4) grade point average for the Fall semester, 1974. The raw scores on

these four variables were converted to z-scores as described in Ferguson (1966), and the subjects were matched on the basis of these z-scores. A very close match was operationally defined as one in which the variability among the z-scores was equal to or less than one point--one point being the standard deviation of z-scores. A less close match was operationally defined as one in which the variability among the z-scores was greater than one.

Forty very close matches and 14 less close matches were obtained from the original pool of 151 subjects. Thus, after matching, there were 54 pairs of subjects. Each pair consisted of one subject who was a performing arts major, and one subject who was a non-arts major.

The pairs of subjects were randomly assigned to one of two treatment conditions. Half of the subjects received fictitious, negative feedback about their degree of creativity, and the remaining subjects received fictitious, positive feedback about their degree of creativity. The feedback was presented in the form of personalized form letters addressed to the subjects by name, which supposedly reported the results of the first testing session (see Appendix C and Appendix D).

Posttesting. The experiment proper was conducted approximately two weeks after the initial testing sessions and after matching of the subjects had been completed. Testing was again conducted during the three regularly scheduled class periods. Although the pretesting yielded a total of 151 subjects, or 54 pairs of subjects, absenteeism at the time the experiment proper was conducted reduced the final number of subjects to 76. The final number of very close matches was 24, and the final number of less close matches was 14. Thus, the experiment was conducted using 38 pairs of subjects, each of which consisted of one subject from Group A, and one subject from Group NA (See Table 2).

Thus, at the beginning of the second session, there were matched pairs consisting of two types of subjects --subjects from Group A, and subjects from Group NA. There were also two treatment conditions--positive feedback and negative feedback--to which these pairs of subjects were randomly assigned. These combinations are shown in Table 2.

At the beginning of the second session, each subject was given a letter which supposedly reported the results of the testing done during the first session. Each letter was

addressed to the subject, and was sealed in a legal size envelope which also bore the subject's name. Each envelope was attached to a large, sealed manila envelope which contained one copy of the Barron-Welsh Art Scale, one copy of the GACL, and one sheet of white paper.

After these packets had been distributed, the subjects were instructed to remove the legal size envelope, open it, and carefully read the letter which it contained. They were instructed to return the letter to the envelope when they had finished reading it. They were asked to refrain from asking questions they might have, because the letters were all different.

When all the subjects had read the letters, they were asked to remove the tests from the manila envelope and take them in the order indicated in the upper right hand corner of the tests. The order in which the tests were to be taken was indicated by the number one or the number two. Both the Barron-Welsh Art Scale and the GACL were readministered, and the order of test presentation was randomized to avoid any possible effects of testing order on the results obtained. When all the subjects had completed the tests, they were instructed to return the

tests to the envelope, remove the sheet of white paper from it, and re-seal the envelope. The manila envelopes containing the two tests were then collected.

Debriefing and Collection of Anecdotal Data. When all the tests had been collected, the subjects were given the debriefing letters (see Appendix E), and the experimenter explained to them the experiment and its purpose. Debriefing letters were used by the experimenter in addition to verbal debriefing, because it was believed to be desirable to provide the subjects with a written debriefing statement. The written debriefing letter was intended to minimize the possibility of misunderstanding on the part of the subjects at the conclusion of the experiment.

The subjects were then asked to use the sheet of paper provided to record their reactions to the feedback letters, as well as their overall reaction to the experiment. They were asked not to sign this sheet, but to indicate only whether they had received positive or negative feedback. When these written reactions had been collected, the subjects were dismissed.

CHAPTER IV

RESULTS

Pre-experimental Matching of Subjects

The subjects were matched using z-scores on the following variables: (1) Barron-Welsh Art Scale scores; (2) GACL scores; (3) age in months; and (4) grade point average for the Fall semester, 1974. There were 24 pairs of subjects for whom the matching was very close, and 14 pairs of subjects for whom the matching was less close. Table 3 presents the z-score variability for the 38 pairs of subjects. It should be noted that four of the less closely matched pairs received positive feedback. Because the matching was not perfect, the data were analyzed using analyses of covariance. The analysis of covariance was deemed to be the most appropriate test to use because it does correct for faulty matching.

Table 4 presents the pretest mean scores and standard deviations for the four groups of subjects on the Barron-Welsh Art Scale, the GACL, age in months, and grade point average. A one-way analysis of variance was performed on each variable to determine the significance of the

Table 3

Z-Score Variability for the Thirty-Eight Pairs of
Subjects on the Barron-Welsh Art Scale, the GACL,
Age in Months, and Grade Point Average

Pair	Feedback	Barron-Welsh	GACL	Age	GPA
1	+	0.00	0.80	0.44	0.48
2	+	0.07	0.32	1.00	0.38
3	+	0.00	0.56	0.68	0.66
4	+	0.07	0.42	0.90	0.63
5	+	0.34	0.56	0.38	0.25
6	+	0.21	0.47	0.09	0.94
7	+	0.21	0.24	0.39	0.23
8	+	0.34	0.75	0.83	0.33
9	+	0.14	0.82	0.90	0.29
10	+	0.14	0.98	0.87	0.25
11	+	0.41	0.19	0.29	0.60
12	+	0.13	0.05	0.43	0.77
13	+	0.27	0.18	0.81	0.13
14	-	0.00	0.80	0.80	0.41
15	-	0.00	0.38	0.42	0.29
16	-	0.00	0.74	0.41	0.10
17	-	0.20	0.56	0.25	0.87
18	+	0.89	0.93	0.60	0.77
19	+	0.07	0.37	0.75	0.05
20	-	0.27	0.98	0.10	0.01
21	-	0.28	0.38	0.42	0.35
22	-	0.68	0.93	0.81	0.48
23	-	0.34	0.80	0.66	0.15
24	-	0.41	0.94	0.35	0.00
25	-	0.34	0.19	2.85*	0.44
26	+	0.14	0.75	1.05*	1.09*
27	+	1.01*	0.56	1.05*	0.97
28	+	1.42*	0.93	0.39	0.98
29	+	0.69	1.23*	0.81	2.72*
30	-	0.14	0.74	1.03*	3.25*
31	-	0.07	0.38	1.01*	0.43
32	-	1.32*	0.05	0.61	0.10
33	-	1.83*	0.57	2.34*	0.80
34	-	0.28	1.78*	0.87	0.63
35	-	0.00	0.48	1.01*	2.45*
36	-	0.57	0.00	1.43*	0.79
37	-	0.14	1.11*	1.56*	1.16*
38	-	0.07	0.80	1.03*	0.44

*Indicates z-score variability which is greater than one.

Table 4

Pretest Mean Scores and Standard Deviations for
the Barron-Welsh Art Scale, the GACL, Age in
Months, and Grade Point Average

Test	Group	Mean	<u>SD</u>	<u>F</u>
Barron-Welsh Art Scale	A+	50.92	10.53	.7094
	A-	52.68	10.84	
	NA+	47.68	11.44	
	NA-	50.16	10.14	
GACL	A+	47.53	10.74	.0655
	A-	46.95	9.38	
	NA+	47.05	10.00	
	NA-	48.21	8.99	
Age in Months	A+	231.47	10.96	10.3850*
	A-	228.63	8.33	
	NA+	250.26	16.10	
	NA-	262.58	37.28	
GPA	A+	2.90	0.71	.1677
	A-	2.94	0.65	
	NA+	3.05	0.56	
	NA-	2.95	0.78	

$p \leq .0001$

differences between the means. The F-ratios are also presented in Table 4.

Only on the variable of age in months were the differences between pretest means statistically significant. It can be seen from Table 4 that the mean age for the subjects who were non-arts majors (Groups NA+ and NA-) were higher than the mean ages for the subjects who were performing arts majors (Groups A+ and A-). This difference is attributable to the fact that there were three or four subjects in Groups NA+ and NA- who were as much as five or six years older than the other subjects in the sample. Thus, the mean age for the subjects who were non-arts majors was inflated by a few extreme ages.

It should be noted that, although statistically insignificant, the means for Groups A+ and A- on the Barron-Welsh Art Scale were higher than the means for Groups NA+ and NA-. This difference was in the expected direction, as it would be logically predicted that performing arts majors would score higher than non-arts majors on the test of creativity.

The pretest means of the GACL were very similar, as were the means on grade point average. There was, of course,

no reason to expect that the groups would score differentially on these two variables.

The standard deviations contained in Table 4 indicate that age was the only variable on which the groups differed to any extent in dispersion of scores. The larger standard deviations for Groups NA+ and NA- can be explained by the fact that there were three or four subjects in these groups whose ages were considerably higher than the ages of the rest of the subjects in the sample. That is, there were several extreme ages in Groups NA+ and NA- which inflated the standard deviations of these groups.

Results of Experimental Manipulation

Table 5 contains the actual posttest mean scores, the adjusted posttest mean scores, and the standard deviations for Groups A+, A-, NA+, and NA- on the Barron-Welsh Art Scale and the GACL. The actual pre- and posttest mean scores obtained by the four groups on the Barron-Welsh Art Scale are presented graphically in Figure 1. The actual pre- and adjusted posttest mean scores on the Barron-Welsh Art Scale are presented in Figure 2. The actual pre- and posttest mean scores on the GACL are presented in Figure 3, and the actual pre- and adjusted posttest mean scores on the GACL are presented in Figure 4.

Table 5

Posttest Mean Scores and Standard Deviations
for the Barron-Welsh Art Scale and the GACL

Test	Group	Actual Mean	<u>SD</u>	Adjusted Mean
Barron-Welsh Art Scale	A+	54.05	9.07	51.25
	A-	51.57	12.78	52.29
	NA+	50.37	12.61	49.97
	NA-	47.93	13.27	48.99
GACL	A+	47.16	7.79	49.79
	A-	50.11	9.77	47.40
	NA+	51.53	8.80	48.98
	NA-	48.74	11.30	51.46

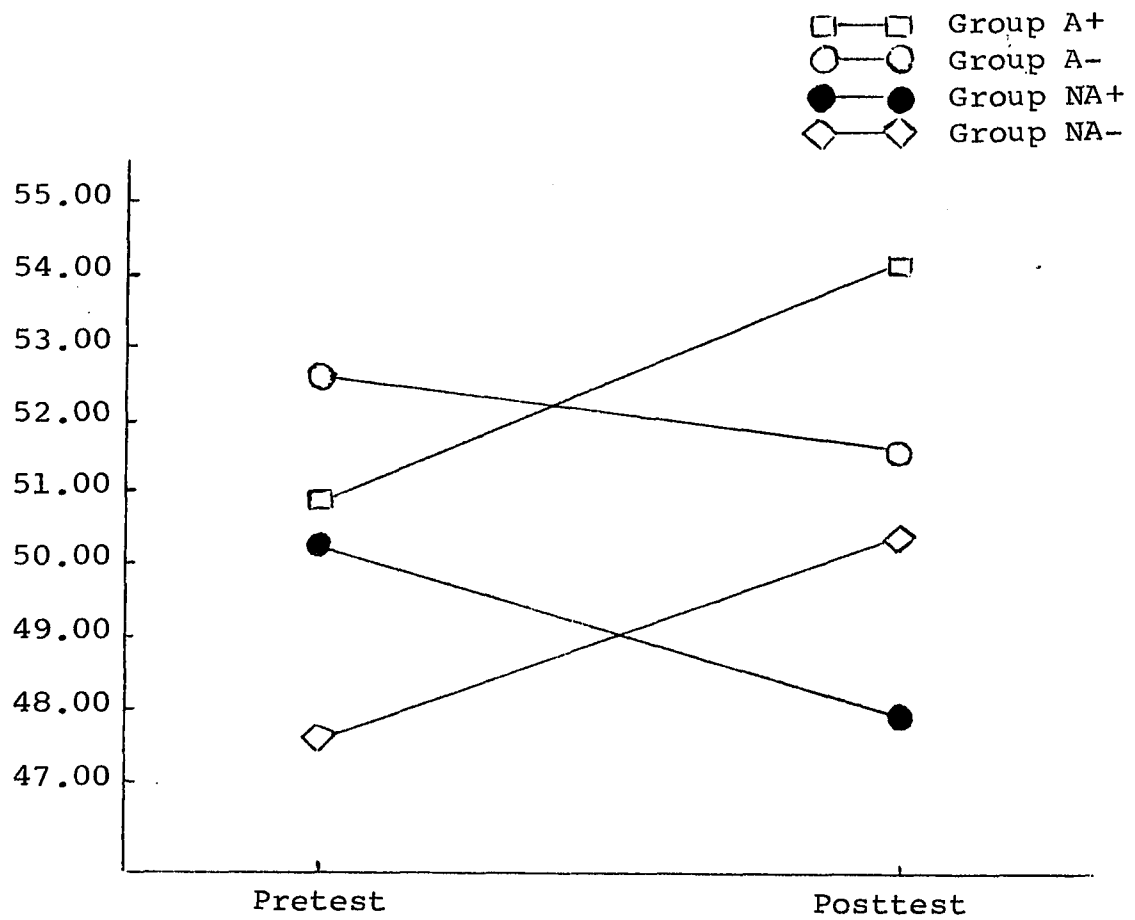


Figure 1. Actual Pre- and Posttest Means on the Barron-Welsh Art Scale for Groups A+, A-, NA+, and NA-.

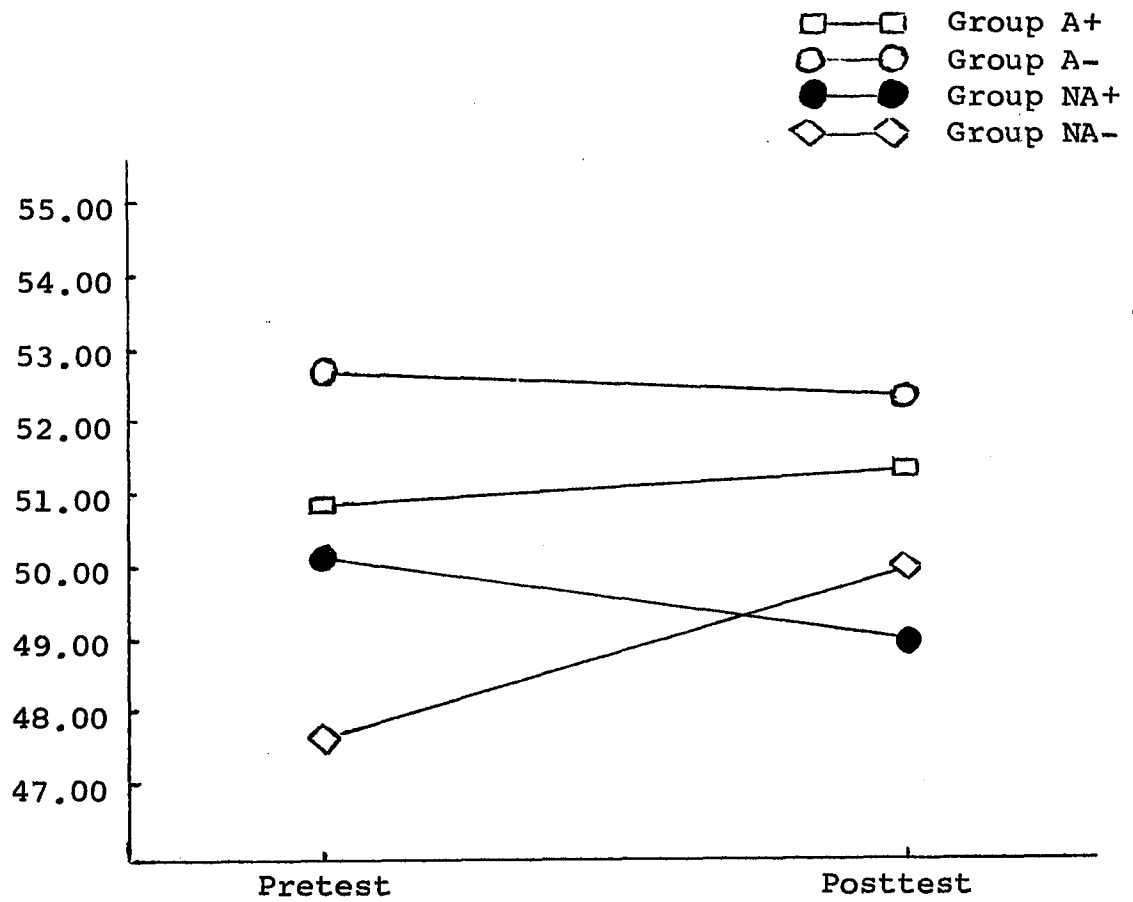


Figure 2. Actual Pre- and Adjusted Posttest Means on the Barron-Welsh Art Scale for Groups A+, A-, NA+, and NA-.

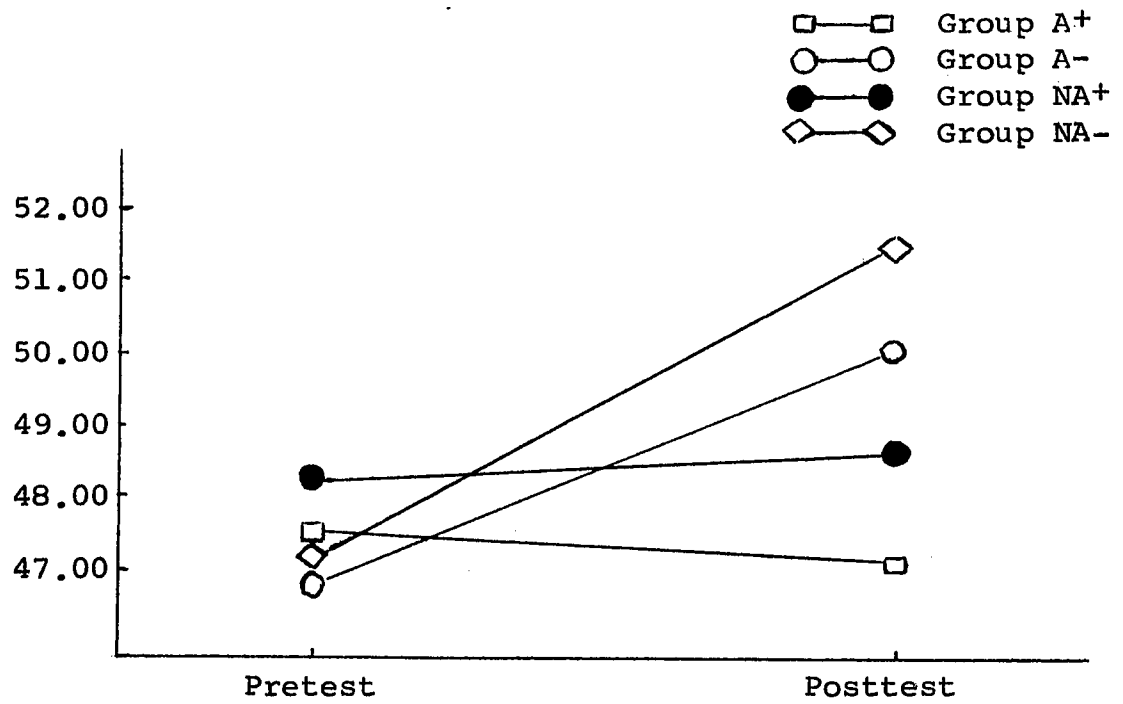


Figure 3. Actual Pre- and Posttest Means on the GACL for Groups A+, A-, NA+, and NA-.

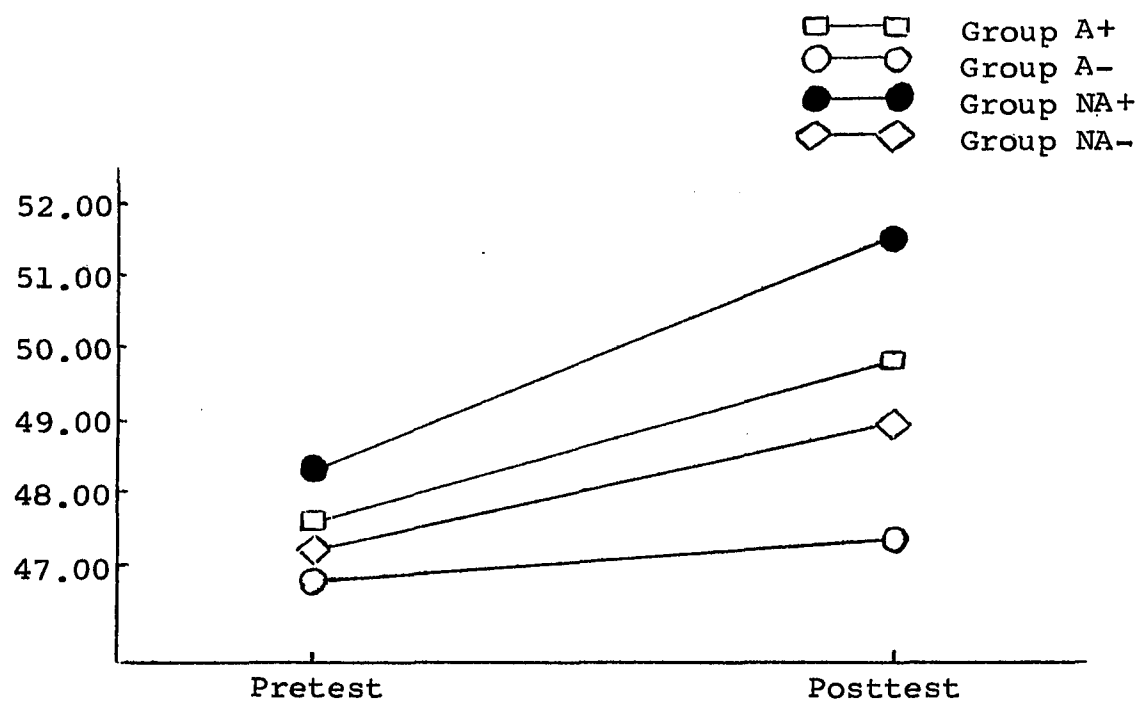


Figure 4. Actual Pre- and Adjusted Posttest Means on the GACL for Groups A+, A-, NA+, and NA-.

The data were analyzed according to a 2 x 2 analysis of covariance design as described in Dixon and Massey (1969). Two such analyses were performed: one using the results obtained from the Barron-Welsh Art Scale; and one using the results obtained from the GACL. The results of the analyses are presented in Table 6. It can be seen in Table 6 that the main effects were non-significant--there were no significant differences between the posttest mean scores of subjects in Group A and subjects in Group NA, and of subjects in Groups A+ and NA+ and subjects in Groups A- and NA- on either the Barron-Welsh Art Scale or the GACL. Table 6 also indicates that the interaction effects were non-significant. The posttest scores were adjusted through analysis of covariance for Barron-Welsh pretest scores, GACL pretest scores, age, and grade point average.

Although the pre- to posttest differences between the four groups were in no case statistically significant, the data presented in Tables 4 and 5, and in Figures 1 through 4 indicated that there were trends in the directions predicted by the original hypothesis about differential group performances on the Barron-Welsh Art Scale and on the GACL (Hypothesis 1, p. 29). There were also trends in the opposite direction. These trends will be discussed subsequently.

Table 6

Summaries of Analyses of Covariance for
the Barron-Welsh Art Scale and the GACL

Test	Source of Variation	SS	df	MS	<u>F</u>
Barron-Welsh Art Scale	Feedback	0.0156	1	0.0156	0.0002
	Type of Subject	71.4844	1	71.4844	1.0530
	Feedback x Subject	18.5391	1	18.5391	0.2731
	Covariates	5345.1094	4	1336.2773	19.6833*
	Barron-Welsh Pretest	5190.0977	1	5190.0977	76.4499*
	GACL Pretest	39.6423	1	39.6423	0.5839
	Age	2.6787	1	2.6787	0.0395
	GPA	2.1259	1	2.1259	0.0313
	Error	4616.4453	68	67.8889	
GACL	Feedback	0.0085	1	0.0085	0.0002
	Type of Subject	33.4087	1	33.4087	0.8421
	Feedback x Subject	102.8643	1	102.8643	2.5929
	Covariates	3808.9570	4	952.2393	24.0033*
	Barron-Welsh Pretest	67.1158	1	67.1158	1.6918
	GACL Pretest	3758.4844	1	3758.4844	94.7409*
	Age	14.8568	1	14.8568	0.3745
	GPA	12.1686	1	12.1686	0.3067
	Error	2697.6406	68	39.6712	

*p ≤ .05

Relationship between Creativity and Self-Confidence

The following Pearson product-moment correlation coefficients as described in Ferguson (1966) were computed:

The correlation between pre- and posttest scores on the Barron-Welsh Art Scale for Group A;

The correlation between pre- and posttest scores on the Barron-Welsh Art Scale for Group NA;

The correlation between pre- and posttest scores on the GACL for Group A;

The correlation between pre- and posttest scores on the GACL for Group NA;

The correlation between pretest scores on the Barron-Welsh Art Scale and the GACL for Groups A+ and A-;

The correlation between pretest scores on the Barron-Welsh Art Scale and the GACL for Groups NA+ and NA-;

The correlation between posttest scores on the Barron-Welsh Art Scale and the GACL for Group A+;

The correlation between posttest scores on the Barron-Welsh Art Scale and the GACL for Group A-;

The correlation between posttest scores on the Barron-Welsh Art Scale and the GACL for Group NA+; and

The correlation between posttest scores on the Barron-Welsh Art Scale and the GACL for Group NA-.

The correlation coefficients are presented in Table 7.

Fisher's z-transformation as described in Ferguson (1966) was used to test the significance of the correlation coefficients. Only the first four correlation coefficients presented in Table 7 were significantly different from zero.

Additionally, Fisher's z-transformation was used to test for differences in the following pairs of correlation coefficients found in Table 7:

The pretest correlation between self-confidence scores and creativity scores for subjects in Groups A+ and A- and subjects in Groups NA+ and NA-;

The posttest correlation between self-confidence scores and creativity scores for subjects in Groups A+ and A-;

The posttest correlation between self-confidence scores and creativity scores for subjects in Groups NA+ and NA-; and

The pooled posttest correlation coefficient for subjects in Groups A+ and A-, and that for subjects in Groups NA+ and NA-.

None of the above pairs of correlation coefficients was significantly different.

Table 7

Correlation Coefficients for Groups A+, A-,
NA+, and NA- Between Pre- and Posttest
Scores on the Barron-Welsh and the GACL

Test	Group	N	r
Barron-Welsh pre- and posttest	A	38	.6270*
Barron-Welsh pre- and posttest	NA	38	.8240*
GACL pre- and posttest	A	38	.7770*
GACL pre- and posttest	NA	38	.7380*
Barron-Welsh and GACL pretest	A+ and A-	38	- .0464
Barron-Welsh and GACL pretest	NA+ and NA-	38	.0741
Barron-Welsh and GACL posttest	A+	19	- .0507
Barron-Welsh and GACL posttest	A-	19	- .0014
Barron-Welsh and GACL posttest	NA+	19	- .1727
Barron-Welsh and GACL posttest	NA-	19	- .1143

*p ≤ .005

The data failed to support the original hypothesis that variations in perceived degree of creativity will be accompanied by variations in level of self-confidence (Hypothesis 2, p. 30). The data also failed to support the original hypothesis that perceived degree of creativity is a more important determinant of self-confidence for Group A subjects than for Group NA subjects (Hypothesis 3, p. 30).

Stability of Creativity and Self-Confidence

The only correlation coefficients that were significantly different from zero were those between pre- and posttest scores on the same test. Pre- and posttest scores on the Barron-Welsh Art Scale and on the GACL remained quite stable for both performing arts majors (Group A) and for non-arts majors (Group NA). These data indicated that the Barron-Welsh Art Scale and the GACL are both measurement devices that are stable over time.

The data indicated only slight pre- to posttest changes in scores on either creativity scores or self-confidence scores, and, thus, failed to support the original hypothesis that both creativity and self-confidence are labile entities which can be manipulated by feedback

(Hypothesis 4, p. 30). However, the lack of sizable pre- to posttest changes probably resulted from the stability of the measurement devices used, rather than from any inherent stability of the constructs measured.

CHAPTER V
DISCUSSION

Pre-experimental Results

The information presented in Table 4 indicated that the pre-experimental means and standard deviations of the four groups of subjects (A+, A-, NA+, and NA-) on the Barron-Welsh Art Scale, the GACL, and grade point average were very similar. Only on the variable of age in months were the differences between means statistically significant. This difference resulted from the fact that three or four subjects in Groups NA+ and NA- were several years older than the other subjects in the sample. Thus, the means and standard deviations for the subjects who were non-arts majors were inflated by a few extreme scores.

The investigator used the pretest data on the Barron-Welsh Art Scale, the GACL, age in months, and grade point average in an attempt to match the subjects. The scores on these four variables were converted to z-scores for this purpose. Because matching was not perfect, the data were analyzed using analyses of covariance, the covariates being: (1) Barron-Welsh Art Scale pretest scores; (2) GACL pretest

scores; (3) age in months; and (4) grade point average. Table 6 reveals that the covariates were the only significant source of variability. The pre-experimental matching of the subjects was quite good, and any faulty matching was corrected by the analyses of covariance.

Results of Experimental Manipulation

Table 4 contains the pretest mean scores obtained on the Barron-Welsh Art Scale and the GACL, and Table 5 contains the posttest mean scores obtained on these two tests. These data are graphically presented in Figures 1 through 4. The analyses of covariance presented in Table 6 show that the feedback did not result in statistically significant changes. The lack of feedback effect held for both types of subjects (A and NA), both types of feedback (positive and negative), and for the various subject and feedback combinations (A+, A-, NA+, and NA-).

Hypothesis 1. The data revealed the following trends in relation to the original hypothesis concerning group performances on the Barron-Welsh Art Scale and the GACL (Hypothesis 1, p. 30):

1. It was hypothesized that Group A+ would show a pre- to posttest increase on both the Barron-Welsh Art Scale and the GACL.

- 1) The actual means indicated that Group A+ showed a slight increase on the Barron-Welsh Art Scale.
 - 2) The adjusted means indicated that Group A+ showed a slight increase on the Barron-Welsh Art Scale.
 - 3) The actual means indicated that Group A+ showed a slight decrease on the GACL.
 - 4) The adjusted means indicated that Group A+ showed a slight increase on the GACL.
2. It was hypothesized that Group NA+ would show a smaller pre- to posttest increase on both the Barron-Welsh Art Scale and the GACL, than that shown by Group A+.
- 1) The actual means indicated that Group NA+ showed a smaller increase on the Barron-Welsh Art Scale than that shown by Group A+.
 - 2) The adjusted means indicated that Group NA+ showed a greater increase on the Barron-Welsh Art Scale than that shown by Group A+.
 - 3) The actual means indicated that Group NA+ showed a greater increase on the GACL than that shown by Group A+.

- 4) The adjusted means indicated that Group NA+ showed a smaller increase on the GACL than that shown by Group A+.
3. It was hypothesized that Group A- would show a pre- to posttest decrease on both the Barron-Welsh Art Scale and the GACL.
 - 1) The actual means indicated that Group A- showed a slight decrease on the Barron-Welsh Art Scale.
 - 2) The adjusted means indicated that Group A- showed a slight decrease on the Barron-Welsh Art Scale.
 - 3) The actual means indicated that Group A- showed a slight increase on the GACL.
 - 4) The adjusted means indicated that Group A- showed a slight increase on the GACL.
 4. It was hypothesized that Group NA- would show a smaller pre- to posttest decrease on both the Barron-Welsh Art Scale and the GACL than that shown by Group A-.
 - 1) The actual means indicated that Group NA- showed a greater decrease on the Barron-Welsh Art Scale than that Shown by Group A-.

- 2) The adjusted means indicated that Group NA- showed a greater decrease on the Barron-Welsh Art Scale than that shown by Group A-.
- 3) The actual means indicated that Group NA- showed a smaller increase on the GACL than that shown by Group A-.
- 4) The adjusted means indicated that Group NA- showed a greater increase on the GACL than that shown by Group A-.

Hypotheses 2 and 3. The data revealed the following with regard to the original hypotheses about the relationship between creativity and self-confidence. It was hypothesized that variations in perceived degree of creativity would be accompanied by variations in level of self-confidence (Hypothesis 2, p. 30). The data showed variations, but these were unsystematic and statistically non-significant.

It was hypothesized that perceived degree of creativity would be a more important determinant of self-confidence for subjects in Group A than for subjects in Group NA (Hypothesis 3, p. 30). The data indicated that perceived degree of creativity was not a differentially important determinant of self-confidence. The low magnitude

correlation coefficients indicated very little relationship between perceived degree of creativity and self-confidence.

Hypothesis 4. The data could be interpreted as failing to support the original hypothesis that both creativity and self-confidence are labile entities (Hypothesis 4, p. 30). However, the only statistically significant correlation coefficients were those between pre- and posttest scores on the same test. Thus, the lack of any sizable pre- to posttest changes on either the Barron-Welsh Art Scale or the GACL most probably resulted from the stability of the tests used, rather than from any inherent stability of the constructs measured.

Explanations of the Results

The study was based upon the proposition that creativity and self-confidence are both rather flexible, labile entities, which are quite susceptible to change. There have been numerous studies which indicated that self-concept is a flexible entity, as well as numerous proponents of this position. At the same time, there is a considerable body of research which has indicated that self-concept is a stable, change-resistant entity, and numerous theorists have

defended this view. Succinctly, there exists what might be termed a "stability-lability controversy" with regard to self-concept.

Rosenburg (1965) defined self-esteem as a favorable or unfavorable attitude toward a particular object--the self. He opined that self-esteem may vary in the sense that one may think of himself as falling somewhere along a continuum.

Gergen (1972), a staunch proponent of the flexible self-concept position, cautioned against adoption of the view that there is no consistency in one's self-concept. He pointed out that many people have been so thoroughly conditioned to think of themselves in certain specific ways, that they cannot change their self-concept even when it is patently inappropriate or even maladaptive. Of course, Gergen contended that such rigidity is pathological, but even though pathological, inflexibility of self-concept may be the rule rather than the exception. Certainly, there are numerous human conditions that are "normal" in terms of the statistical model of normality (Kisker, 1964), but certainly not healthy or desirable (i.e., neuroses, anxiety, periodontal anomalies, etc.). Perhaps a flexible

self-concept is a desirable, but, for the majority of people, yet to be a realized goal.

In fact, this may be as much a societal dilemma as a personal one. Gergen (1968) indicated that society has always reinforced consistent behavior, tracing this type of reinforcement all the way back to Biblical times. He indicated that there is a tendency not only to conceptualize people as unified, consistent systems, but also to punish inconsistencies. He stated that there are valid reasons for the value placed on consistency by society-- it is simply easier to deal with consistent behavior than inconsistent behavior. The functioning of society may be facilitated by consistent behavior, but perhaps individuals are being forced to pay too high a price for consistent self-concepts. In fact, there may be many similarities in the seeming conflict between societal and individual well-being in the realms of both self-concept and creativity.

Other writers have posited a stable self-concept. Brownfain (1952) reported research which indicated that stability was not only a salient characteristic of the self-concept, but also a desirable one. He indicated that stability of self-concept is a result of integrative functioning of the personality, not rigidity of style.

His results indicated that, compared with subjects with labile self-concepts, subjects with stable self-concepts had a higher self-esteem, were less nervous, had fewer feelings of inferiority, participated more actively in social interactions, were better liked by their peers, and demonstrated a lower frequency of defensive behavior.

Rogers (1947) hypothesized that psychological adjustment is attained only when the various ways in which one views himself are organized into a conscious concept--a concept of the self. Lowe (1961) argued that to be a useful construct, self-concept must be shown to be consistent in a given individual. Parker (1966) drew a distinction between self-concept and self-report, and reported research that showed that both self-report and self-concept remained consistent under various experimental conditions. Bertocci (1945) viewed the self as a unique unity which could be influenced, or even coerced by external forces, but which actively sought to maintain its own method of adjustment.

There have been numerous studies which have yielded clear evidence that the self-concept is rather easily altered. However, there have also been numerous studies which attempted to demonstrate the flexibility of self-concept, but yielded negligible results. Stotland and

Zander (1958) reported that failure may result in lowered self-evaluation under certain conditions, but may have no effect on self-evaluation under other conditions. Hills and Williams (1965) reported that personality test results which were presented to the subjects via written summaries did not result in positive changes in self-perception. This feedback had either a negligible or a detrimental effect upon self-perception. The crucial factor appeared to be the degree of congruence between the feedback and the subject's pre-experimental expectations and goals.

The possibility that there exist different personality types, some of which are highly amenable to social persuasion and some of which are highly resistant to it, was raised by Janis (1954). In this same vein, Gergen (1969) posited that certain facets of the self are quite resistant to modification, while others are rather easily altered.

The issue of the stability or lability of self-concept is far from resolved. Further, the basic premise of the present study was that flexibility is a characteristic not only of self-concept, but also of creativity. While there is abundant research and theorizing on the self-concept dimension, the writer did not find even one article

which addressed itself to the premise that creativity is a labile entity. Rather, implicit in much of the literature on creativity is the notion that one's degree of creativity, however slight, must be carefully nurtured (Camp, 1963; Cardew, 1957; Caruthers, 1963; Drevdahl, 1962; Fahey, 1963; Fein, 1962; Gold, 1963; Isaacs, 1963; Lagious, 1963; Morrow, 1958). If such nurturance is not forthcoming, creativity dies on the vine. The literature would seem to indicate that creativity is a fixed commodity, and that once one has formed a judgment about his degree of creativity, it is exceedingly difficult to modify this conception.

Perhaps both creativity and self-concept are, after all, stable entities, and not, as hypothesized in this study, easily changed, labile constructs. However, there are factors relating to the manipulation of perceived creativity and self-confidence, and the measurement of the effect of this manipulation which explain better the results of this study than does the rejection of the hypothesis that creativity and self-confidence are labile entities.

While there is a considerable body of literature on the experimental manipulation of self-concept, the writer did not find even one attempt to manipulate perceived degree of creativity. In fact, this was one of the factors

that prompted the study. However, there were no precedents or guidelines to follow regarding effective methods for altering perceived degree of creativity. Perhaps there are, indeed, methods which would effectively alter perceived degree of creativity, but the approach used in this study was not one such method.

The inefficiency of the attempt to manipulate perceived degree of creativity, was amplified by the wide variety of definitions of creativity, and very definite conceptions of their own level of creativity that the subjects brought to the experiment. The subjects found it relatively easy to discount the feedback--whether positive or negative--if it was dissonant with their perceptions of their own degree of creativity. The literature indicated that people do find it relatively easy to discount feedback that is inconsistent with their own self-perceptions. Israel (1960) reported that subjects tended to accept others whose evaluations of them were consistent with their own self-evaluations, and to reject others whose evaluations of them were inconsistent with their own self-evaluations. Jones and Ratner (1967) found that when low self-esteem subjects were given positive feedback, they reacted negatively to it. However, when low self-esteem subjects

received negative feedback, they reacted positively to it. They explained this result in terms of congruence. That is, feedback that is consistent with a person's self-evaluation is readily accepted, whereas feedback that is inconsistent with a person's self-evaluation is either accepted with difficulty or rejected.

Further, the assessment of both creativity and self-concept presents numerous problems. Lowe (1961) noted the problem of demonstrating that an internal experience (self-esteem) is accurately conveyed by an external response (completing a check list). The problem of assessment is further compounded by Gergen's (1969) contention that while people do have experiences and feelings that are clearly differentiated and rigidly fixed in their minds, it does not necessarily follow that they are able to define clearly and verbalize them. Thus, it would appear that the best approach to the assessment of both creativity and self-confidence would be to use several different measures of both constructs. This is, indeed, what many of the researchers have done (Bramel, 1962; Grimjes, 1959; Hills and Williams, 1965; Janis, 1954; Mackinnon, 1962; McDermid, 1965; Shaefer, 1969; Stratton and Spitzer, 1966).

In the present study, the mode of feedback was another major contributor to the lack of significant effects. The letters simply did not influence the majority of subjects. Certainly, the feedback letters were proven to be inadequate.

The inadequacies of the letters appear to have combined with several other factors to eliminate effectively the possibility of obtaining any treatment effects. The deception technique was not elaborate enough. The relatively high level of sophistication of the subjects appears to have augmented the inadequacies of the feedback letters and the deception technique. It is possible that the experiment would have yielded significant results with a younger group of subjects. Certainly some researchers have obtained significant results using relatively simple deception and feedback techniques with younger subjects (Bishop, 1973; Gibby and Gibby, 1967; Ludwig and Maehr, 1967).

It would appear that the measurement problems inherent in both constructs, the weaknesses of the feedback letters, the simplicity of the deception technique, the level of sophistication of the subjects, and the incongruence of the feedback with self-perceptions vitiated significant treatment effects.

It is also very probable that the lack of change in creativity and self-confidence can be attributed to the stability of the tests used to measure these constructs--not to any inherent stability of the constructs themselves. The correlation coefficients obtained between pre- and post-test scores on the same test were of large magnitude, and were the only correlation coefficients which were significantly different from zero. Further, there has been considerable research that indicated that the GACL, the instrument used to assess changes in self-confidence, shows considerable stability over time.

Isabelle and Dick (1969) noted that with college students GACL scores demonstrated considerable stability over an interval of two and one-half years. Markwell (1965) reported reliability coefficients for the GACL which varied from .72 to .93, and were significant at the .05 level. Gough and Heilbrun (1965) reported that GACL test-retest reliability coefficients ranged from .01 to .86. Thus, it is quite probable that the lack of pre- to posttest change was due to the stability of the tests used.

Recommendations for Further Study

This experiment suggested several recommendations for further studies. The mode of feedback should be greatly refined and improved, and any mode of feedback should be tested via a pilot study before actually employing it in a study proper. Feedback effects would be greatly enhanced by presenting the feedback to the subjects individually, and interpreting the implications of the feedback in a one-to-one interview.

An individual, as opposed to group, format should be used. This would permit the use of a battery of tests of both creativity and self-confidence, thus lending greater credence to the deception technique and feedback. In this same vein, it would be desirable to avoid rushing immediately from feedback to posttesting.

The subjects comprising the two groups (artistically-oriented subjects and non-artistically-oriented subjects) should be drawn from two distinctly different settings. The results of the present study showed that there was very little pretest difference between the two groups on either creativity or self-confidence. It is probable that the subjects in this study were very homo-

geneous with regard to the two constructs. Drawing Group A subjects from a conservatory--or from a population of individuals who are successfully pursuing careers in the arts, and Group NA subjects from a regular university setting--or from a population of individuals pursuing careers in some area unrelated to the arts, might have yielded results more supportive of the hypotheses.

CHAPTER VI

SUMMARY AND CONCLUSIONS

The purpose of this study was to investigate the relationship that the writer believed existed between creativity and self confidence. The hypotheses which were stated and the results which were obtained are as follows:

1. There is a significant ($p \leq .05$), positive relationship between creativity and self-confidence. Group A+ will show a pre- to posttest increase on both the Barron-Welsh Art Scale and the GACL, Group NA+ will show a smaller pre- to posttest increase on both tests, Group A- will show a pre- to posttest decrease on both tests, and Group NA- will show a smaller pre- to posttest decrease on both tests. The results revealed no pre- to posttest changes which were statistically significant, but trends related to this hypotheses were noted.
2. Variations in perceived degree of creativity will be accompanied by variations in level of self-confidence. The results showed that there were

variations, but these variations were unsystematic and statistically non-significant.

3. Perceived degree of creativity is a more important determinant of self-confidence in Group A subjects than in Group NA subjects. The data indicated very little relationship between perceived degree of creativity and self-confidence for either group.
4. Both creativity and self-confidence are labile entities which can be manipulated by feedback. The results revealed little or no change in creativity scores or self-confidence scores as a result of feedback. It was noted that this lack of change probably resulted from the stability of the tests used rather than from any inherent stability in either construct.

Both constructs investigated in the study were operationally defined. Creativity was defined as that ability which is measured by the Barron-Welsh Art Scale. Self-confidence was defined as that aggregate of personality characteristics which is measured by the Self-confidence scale of the GACL.

Seventy-six female undergraduates from the University of North Carolina at Greensboro served as subjects in the

experiment. Half of the subjects were majoring in some area of the performing arts (Group A), and half were non-arts majors (Group NA). The subjects were pretested on the Barron-Welsh Art Scale and the GACL, and then matched on the following variables: Barron-Welsh Art Scale scores, GACL scores, age in months, and grade point average. After matching, there were 38 pairs of subjects, each pair consisting of one subject from Group A and one subject from Group NA.

These pairs of subjects were randomly assigned to one of two treatment groups. One half of the subjects received negative feedback (supposedly based upon the tests taken during the pretesting session) regarding their degree of creativity. The other half received positive feedback. The feedback was in the form of personalized form letters. The subjects again took both the Barron-Welsh Art Scale and the GACL, and were then debriefed. Anecdotal data were also collected. The subjects were asked to write down their reactions to the feedback letters and their reactions to the experiment as a whole.

The data were analyzed according to a 2 x 2 analysis of covariance. Two such analyses were performed--one using the data obtained from the Barron-Welsh Art Scale, and one

using the data obtained from the GACL. In addition, the following correlation coefficients were computed:

The correlation between pre- and posttest scores on the Barron-Welsh Art Scale for Group A;

The correlation between pre- and posttest scores on the Barron-Welsh Art Scale for Group NA;

The correlation between pre- and posttest scores on the GACL for Group A;

The correlation between pre- and posttest scores on the GACL for Group NA;

The correlation between pretest scores on the Barron-Welsh Art Scale and the GACL for Groups A+ and A-;

The correlation between pretest scores on the Barron-Welsh Art Scale and the GACL for Groups NA+ and NA-;

The correlation between posttest scores on the Barron-Welsh Art Scale and the GACL for Group A+;

The correlation between posttest scores on the Barron-Welsh Art Scale and the GACL for Group A-;

The correlation between posttest scores on the Barron-Welsh Art Scale and the GACL for Group NA+; and

The correlation between posttest scores on the Barron-Welsh Art Scale and the GACL for Group NA-.

The analyses of covariance revealed no significant differences between the posttest mean scores of either performing arts majors and non-arts majors, or between subjects who received positive feedback and subjects who received negative feedback, or for the interaction between feedback and type of subject. All but the first four correlations were of very low magnitude, and only the correlations between pre- and posttest scores on the same test were significant.

Thus, the data indicated that the treatment had no statistically significant effects on either the subjects' level of self-confidence or degree of creativity. Several possible explanations of these results were discussed, including: (1) the use of only one test of creativity and one test of self-confidence; (2) the brevity of the tests used; (3) the group setting; (4) the weakness of the feedback letters; and (5) the simplicity of the deception technique. It was also noted that the lack of pre- to posttest change probably resulted from the stability of the tests used--not from any inherent stability in the constructs of creativity and self-confidence.

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APPENDIX A

Initial Statement to Subjects

INITIAL STATEMENT TO SUBJECTS

I am Howard Higgs, a professor of Psychology and Education at Bennett College in Greensboro, North Carolina, and I am conducting an experiment which deals with creativity. You have been asked to participate in this experiment which requires two sessions, each of which will last less than one hour. All you will do today is complete a brief information sheet and take two brief tests. We will also arrange a time about two weeks from today for the second session. At the beginning of the second session, I will give you a letter indicating, according to the tests, your level of creativity.

APPENDIX B

Background Information

BACKGROUND INFORMATION

NAME:

BIRTHDATE: YEAR _____ MONTH _____ DAY _____.

SEX:

SCHOOL:

CLASS (i.e., Freshman, Sophomore, etc.):

MAJOR:

MINOR:

CAREER ASPIRATIONS:

MAILING ADDRESS:

APPENDIX C

Positive Feedback Letter

POSITIVE FEEDBACK LETTER

Dear _____ :

This study indicates that you are a very creative person. You do often function in ways that appear to be quite creative, and indeed they are. Apparently other people think of you as highly creative, and you also tend to view yourself in this way. Further, this study indicates that you have learned to express, or use, your high degree of creativity quite effectively. Certainly, your general functioning, your productivity, your interactions with others--in short your overall adjustment to life-- are all enhanced by your high level of creativity. Succinctly, whether or not you have ever consciously thought about it, you are indeed a highly creative person, as well as a person who is functioning in a very creative manner.

For example, on the tests you took, your responses were very like the responses of people who are known to be highly creative. You responded in a way similar to the way in which famous, truly productive people respond. Your responses were rather like the responses of people who have gained national and international recognition in careers such as the one in which you have indicated interest.

Of course you should be encouraged by these results. However, remember that even though degree of creativity is very important, success in life is, of course, determined by many factors. You are fortunate to know a little more about yourself now than you did before. In fact, I would now like for you to take two further tests in hopes that we can add even more detail to your self knowledge.

Sincerely,

Howard R. Higgs

APPENDIX D

Negative Feedback Letter

NEGATIVE FEEDBACK LETTER

Dear _____:

This study indicates that you are not a very creative person. You do often function in ways that appear to be creative, but this is mostly a facade. As you know, we often see in ourselves as well as in others exactly what we expect, want, or need to see. Apparently, people have always wanted or needed to perceive you as a creative person, and have more or less forced you to play this role. Apparently, you have learned to play well the role of a creative person. However, the results of this study indicate that you are basically not a creative person. It is likely that the facility with which you play the role of a creative person has blinded both you and other people to your underlying lack of real creativity.

For example, on the tests you took, your responses were in no way like the responses of people who are known to be highly creative. You responded in a rather different way from the way in which famous, truly productive people respond. Your responses were different--often opposite--from the responses of people who have gained national and international recognition in careers such as the one in which you have indicated interest.

Of course, you should not be too discouraged by these results. Even though degree of creativity is very important, success in life is, of course, determined by many factors. You are fortunate to know a little more about yourself now than you did before. In fact, I would now like for you to take two further tests in hopes that we can add even more detail to your self knowledge.

Sincerely,

Howard R. Higgs

APPENDIX E
Debriefing Letter

DEBRIEFING LETTER

Dear _____:

Thank you very much for your help in this study. I want to take this opportunity to assure you that the letter you read regarding your degree of creativity at the beginning of this session was purely fictitious. It was in no way based upon the tests you took, or any other sources of information. In fact, it was composed before I ever met you.

The purpose of this study was to determine if there is a relationship between creativity and self-confidence. It was not designed to determine how creative you are as an individual. Rather, I wanted to determine if your perception of your degree of creativity had any effect upon your self-confidence.

I am sorry that it was necessary to mislead you in this way, and I hope that this procedure has not unduly discomfited or disturbed you. I know that those of you who received letters indicating that you lacked creativity were probably concerned. Also, I know that those of you who read letters indicating that you were very creative may now be somewhat disappointed.

However, you should remember that to assess accurately a person's degree of creativity would require much more test data, and a great deal more information of all kinds than I have obtained from you. This study is not a valid indication of how creative you are, and it was certainly not intended to be. Again, I am sorry it was necessary to give you incorrect feedback. Your participation was most helpful, and I thank you very much for your time and effort.

When the study is completed, I shall send you a short report of the results so that you may have the satisfaction of knowing you have contributed to research in human development and behavior.

If, for any reason, you would like to discuss further this study with me, please call me any evening at 919-288-0335. I will be most happy to talk with you over the telephone, or to arrange an appointment.

Again, thank you very much for your help.

Sincerely,

Howard R. Higgs