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THE UNIVERSITY OF OKLAHOMA

GRADUATE COLLEGE

A DEVELOPMENT OF SUGGESTIONS OF PRACTICES FOR ENHANCING CREATIVITY IN THE COLLEGE OF EDUCATION CLASSROOM

A DISSERTATION

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfillment of the requirements for the

degree of

DOCTOR OF EDUCATION

BY

BETTY E. THOMAS ATKINSON

Norman, Oklahoma

1977

A DEVELOPMENT OF SUGGESTIONS OF PRACTICES

FOR ENHANCING CREATIVITY IN THE

COLLEGE OF EDUCATION CLASSROOM

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A DEVELOPMENT OF SUGGESTIONS OF PRACTICES FOR ENHANCING CREATIVITY IN THE COLLEGE OF EDUCATION CLASSROOM

Betty E. Thomas Atkinson, Ed. D.
The University of Oklahoma, 1977

Chairman: Gene D. Shepherd

The major problem was fourfold: (1) to identify recommended practices to enhance creativity in any classroom through a review of literature published since 1965; (2) to identify recommended practices which more than two-thirds of a selected panel of experts indicate as appropriate in a college of education classroom; (3) to identify those suggestions of practices which are agreed upon by faculty members and graduate students in the College of Education at East Carolina University; and (4) after careful consideration of responses from experts, faculty members, and graduate students, to develop a list of suggestions of practices for enhancing creativity in a college of education classroom.

The participants consisted of the following: nine experts selected according to their extensive research in the area of creativity; 20 assistant professors, associate professors, and professors teaching at least one graduate course in the College of Education at East Carolina University; and 513 graduate students enrolled in a graduate course taught by a participating faculty member. A review of professional literature was the basis for the establishment of 39 recommended practices reacted upon by the panel of experts. Recommendations of the experts determined the practices contained in the list of suggestions of practices to enhance creativity in a college of education classroom to which faculty members and graduate students indicated their opinions.

In view of the findings it was concluded and recommended that: (1) Through the utilization of defensible professional literature, an adequate list of recommended practices in a college of education classroom was established. (2) The selected panel of experts agreed upon 30 of the recommended practices as applicable to a college of education classroom. (3) The 20 participating assistant professors, associate professors, and professors agreed upon 25 of the 30 practices as applicable to a college of education classroom. (4) Eighty percent of the graduate students agreed to the appropriateness of 21 of the suggestions of practices for enhancing creativity in a college of education classroom. (5) College personnel should work toward fuller implementation of practices for enhancing creativity in a college of education classroom. (6) Students should be allowed more input into the procedures to be carried out in the college of education classroom. (7) College of education faculty members need to be concerned about the practices which will enhance creativity in their students and incorporate those considered appropriate by experts in the field of creativity, other faculty members and students. (8) Colleges of education should consider the inclusion of a course specifically designed for assisting teachers in the utilization of practices appropriate for enhancing creativity in college students.

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DEDICATION

This research study is lovingly dedicated to the following: to my husband, Don, and our children, Kendra, Tommy, Donnie, and Marty for their prayers and understanding love each day of my life; and to my parents, Arthur and Mattie Thomas, for their immeasurable contributions to the education of their daughter.

TABLE OF CONTENTS

		Page
LIST OF TABLES		ix
CHAPTER		
I.	General Plan of the Study	1
	Introduction	1
	Statement of the Problem	3
	Research Questions in the Study	4
	Definitions of Terms	5
	Assumptions Made in the Study	6
	Limitations of the Study	7
	Research Procedures	9
	Organization of the Study	15
II.	Review of the Literature	17
	Overview of Creativity	17
	Development of Instruments	29
III.	Lists of Recommended Practices for Enhancing Creativity	33
	Complete List of Recommended Practices	33
	Practices Identified by Three Authors	84
	A Discussion of the Lists of Recommended Practices for Enhancing Creativity in Any Classroom and a College of Education Classroom	101
IV.	Identification, Selection, and Responses of the Panel of Experts	105
	The Selected Panel of Experts	105
	Analysis of Responses of the Panel of Experts to the Recommended Practices	112
V.	Identification and Discussion of Participating University and Faculty Members	123

CHAPTER Page

Identification of the Participating University . 123
Faculty Members and an Analysis of Responses . . 125

VI. Participating Students and an Analysis of Their Responses 134

VII. Summary, Conclusions, and Recommendations . . . 147

Summary 147
Major Findings 148
Discussion of the Developed List of Practices . 154
Conclusions and Recommendations 158
Suggestions for Further Studies 160

SELECTED BIBLIOGRAPHY 162

APPENDIX A 182

APPENDIX B 192

APPENDIX C 196

APPENDIX D 199

APPENDIX E 202

APPENDIX F 206

APPENDIX G 210

LIST OF TABLES

Table		Page
1.	Summary of Responses of Panel of Nine Experts . .	113
2.	Degrees of Experts' Agreement to Recommended Practices	122
3.	Summary of Faculty Responses	126
4.	Degrees of Faculty Members' Agreement to Suggestions of Practices	130
5.	Weighted Ranking of Faculty Members' Responses to the Suggestions of Practices	132
6.	Summary of Responses of Graduate Students	136
7.	Degrees of Students' Agreement to the Suggestions of Practices	139
8.	Weighted Ranking of Students' Responses to the Suggestions of Practices	143
9.	Comparison of Responses of Experts, Faculty Members, and Graduate Students	153

A DEVELOPMENT OF SUGGESTIONS OF PRACTICES FOR ENHANCING CREATIVITY IN THE COLLEGE OF EDUCATION CLASSROOM

CHAPTER I

General Plan of the Study

Introduction

The need to search for an environment which enhances creativity is of major concern in schools today, kindergarten through graduate school levels, according to such experts as E. Paul Torrance, James A. Smith, Donald W. MacKinnon, and others. Through conscientious efforts to gain more insight into the enhancement of creativity at any school level, college of education faculty members may be able to utilize practices which will develop an appropriate environment that enhances creativity.

Ralph J. Gleason pointed out that by the time students become college age they face rigidity in structure organization. He also

suggested that attitudes held by professors tend to prevent students from achieving important experiences (Heist, ed., 1968, p. 9).

James A. Trent emphasized the challenge of college and university faculty to identify various conditions which assist in the enhancement of creativity, strengthen those enhancing conditions and eliminate those conditions which discourage creativity among college and university students (Heist, ed., 1968, p. 17). Harold K. Hughes, in his concern for scientific creativity in college students, presented suggestions considered ideal for producing more creative students, especially scientists; however, he presented no data to support his hypotheses (1969, p. 74). Hughes identified suggestions for a creative classroom which included the following: flexibility of study; encouragement of divergent thinking; use of open- as well as closed-book tests; supportive climate but only as personal as desired by the student; and stressing that life is "compromise" and little areas of study are totally knowledgeable.

Ralph J. Hallman suggested obstacles which should be avoided by teachers who desire to enhance creativity: pressure to conform; attitudes of authoritarian nature; disparagement; personalities suggesting rigidity and inflexibility; strong emphases upon grades and other rewards; demands for pre-determined responses; over-emphasis upon student success; disapproval of divergent-thinking students; and an intolerance of innovations and fun (1970, p. 325-327). These suggestions, appearing in research literature reviewed by Hallman, indicated

that certain practices may be effective when teachers wished to encourage creativity in their classroom.

Statement of the Problem

The problem for this study was to develop a list of suggestions of practices which will be beneficial to college of education faculty members who are concerned with and have the desire to enhance creativity in their classroom. More specifically, this study was broken down into four sub-problems:

1. Practices recommended as appropriate for the enhancement of creativity in any classroom were identified from a survey of the professional literature published since 1965.
2. The appropriateness of the recommended practices for a college of education classroom was validated by a panel of experts.
3. The list of suggestions of practices for enhancing creativity in the college of education classroom as validated by the panel of experts and compiled in the form of an opinionnaire by the researcher was submitted to and reacted upon by faculty members and graduate students in the College of Education at East Carolina University, Greenville, North Carolina.

4. A list of suggestions of practices recommending application in a college of education classroom was developed by the researcher after careful consideration of responses from the selected panel of experts, university faculty members, and graduate students. Suggestions for further studies were provided.

Research Questions in the Study

According to Kerlinger, similar opinions may be obtained through the utilization of specific techniques such as in sample surveys (1964, p. 411); therefore, it was concluded that some agreement may be gained in developing suggestions for the enhancement of creativity in the college of education classroom. The survey used by the researcher was designed to answer the following questions:

1. Based upon the professional literature published since 1965, what practices are recommended for enhancing creativity in any classroom?
2. What will be the responses of a panel of experts to the appropriateness of the recommended practices derived from the literature?
3. What will be the responses of and what agreements will exist between and among the faculty members

and graduate students at East Carolina University and the panel of experts?

4. Through the utilization of a panel of experts, faculty members, and graduate students, what practices will be identified as appropriate for inclusion or exclusion in the list of suggestions of practices to enhance creativity in the college of education classroom developed by the researcher?

Definitions of Terms

In conducting this study, it was necessary to refer to terms which could be interpreted differently than the researcher intended. It was also probable that some readers may use other terms which are synonymous to terms used by the researcher. For these reasons the following definitions were offered.

The Complete List of Recommended Practices consists of approximately 1,000 practices identified by the researcher in the reviewed literature as helpful for the enhancement of creativity in any classroom.

Creativity is the flash of something novel without attributing to whether results are tangible, but that the notable concern is the "inspired moment" rather than the "inspired product" (Maslow, 1963).

Creative Thinking is distinguished by the fact that something novel to the individual is occurring. The tendency is to equate creative thinking with divergent thinking, which may lead to many routes to a diversity of likely solutions, according to Torrance, Getzels, Jackson, and Taylor (1965).

The Panel of Experts are those authors identified by the researcher as having published or edited a minimum of three books, articles, or reports on the subject of creativity.

Recommended Practices are those practices recommended by three or more authors in the reviewed literature published since 1965, and presented to the panel of experts for validation of their applicability in a college of education classroom.

Suggestions of Practices are those recommendations agreed upon by 2/3 of the selected panel of experts.

Assumptions Made in the Study

Certain assumptions were made about the selected panel of experts, the participating faculty members and graduate students, and the collection instruments. The most important of these assumptions are as follows:

1. Agreement of the panel of experts to the recommended practices to enhance creativity in the college of education classroom is evidence of content validity.

2. The panel of experts selected to review the recommended practices to enhance creativity in the college education constituted a true representation of known experts in the area of creativity. Criteria for selection of these experts was based upon their extensive research as evidenced in their publications, editings, conference and symposium reports, and other studies.
3. Recommended practices which enhance creativity were content free and applicable to all colleges of education classrooms.

Limitations of the Study

It was necessary to place certain limitations on the study. Without these limitations the parameters of the data collection could not have been properly established and the volume of data would have been unwieldly. The following limitations were, therefore, established for this study:

1. Appropriate decisions in the area of enhancing creativity in any classroom define the "art of teaching" to a great extent and can only be made by the teacher who possesses total understanding and knowledge of the range of his or her students' abilities, including

creative potential; however, necessary confidence and support desired by faculty members may be ascertained through this study.

2. The recommended practices for enhancing creativity in the college of education classroom was obtained through a review of literature published since 1965. As evidenced through a review of the literature, much of the research in the area of creativity has been accomplished since this date.
3. The selected panel of experts was limited to no less than seven nor more than ten experts as evidenced by their publications, editings, conference and symposium reports, and/or research studies.
4. The faculty population was limited to those faculty members within the College of Education at East Carolina University, Greenville, North Carolina, who were assistant professors, associate professors, and professors, and teaching at least one 400-level graduate class during the 1976-77 winter term.
5. The student population was limited to those graduate students who were enrolled in at least one graduate class at the 400 level and taught by an assistant professor, associate professor, or professor in the

College of Education at East Carolina University during the 1976-77 winter term.

Research Procedures

The sample survey which attempts to determine incidence, distribution, and relations among sociological and psychological variables, focuses on people, the needed facts of people and their beliefs, attitudes, opinions, inspirations, and conduct (Kerlinger, 1964, p. 411). This method was selected as the appropriate one for a study intended to identify practices within a college of education environment which enhance creativity since respondents reacted from a social scientific standpoint to the cognitive object of education uses (Kerlinger, 1964, p. 458-459).

Phase one of the study involved a critical analysis of literature published since 1965, as a basis for compiling recommendations for enhancing creativity in any classroom. Criteria for item selection for the inclusion within the list of recommended practices to enhance creativity in a college of education classroom was to have been identified by a minimum of three authors.

As the literature was reviewed, the statements with implications for use in any classroom as a practice to enhance creativity was recorded with their sources. The following literature was reviewed:

1. Books such as Stimulating Creativity (Stein, 1975), Teaching for Creative Endeavor (Michael, 1968), Encouraging Creativity in the Classroom (Torrance, 1970), and others.
2. Books containing selected papers from proceedings of symposiums and conferences, such as Scientific Creativity: Its Recognition and Development (1966) and Climate for Creativity (1972) edited by Taylor, and The Creative College Student: An Unmet Challenge (1968) edited by Heist, and others.
3. Dissertation abstracts which were concerned with enhancing creativity in any classroom.
4. Professional periodicals, such as The Journal of Creative Behavior, published since 1965.

After recommended practices for enhancing creativity in any classroom were identified from the review of the literature, this complete list of approximately 1,000 recommended practices was recorded and identified by the author in Chapter III. This list of recommended practices was then reduced in length by retaining only those 39 practices found in the professional literature a minimum of three times by three authors. After careful consideration, comparison and analyses, a minimum of editing, restating and combining was performed to produce specific recommended practices to be judged by the selected panel of experts.

In phase two of the study, the appropriateness of the 39 recommended practices was judged by the selected panel of nine experts. Content validity was defined by Kerlinger as the "representativeness of the content of a measuring instrument and consists primarily in judgment" (1964, p. 459). Each item on the list of recommended practices was placed in an opinionnaire format and judged by the selected panel of nine experts for its appropriateness to the property being studied. The list of recommended practices was placed in opinionnaire form and mailed, along with a letter of explanation (Appendix A), to each member of the panel. The nine experts were requested by the researcher to indicate the appropriateness, inappropriateness, or appropriateness with modifications of each recommended practice in a college of education classroom. A list was developed which indicated agreements to the degree of the following:

Greater than 90%

75 - 90%

50 - 74%

Less than 50%

After the recommended practices were received from the selected panel of experts, responses were analyzed by the researcher. Only those 30 items which were agreed upon by more than 2/3 majority of the panel of experts as appropriate for a college of education classroom were included in a list of suggestions of practices to be presented in opinionnaire form to faculty members and graduate students in the College of Education at East Carolina University, Greenville, North Carolina.

Phase three of the study involved the gathering of data from faculty members and graduate students in the College of Education at East Carolina University. A letter requesting permission to gather the necessary data in the graduate classes was provided for the Dean of the College of Education (Appendix C) who presented the request to the Board of Trustees at East Carolina University. Upon the Board of Trustees' approval, the executive board of the College of Education granted its permission to the researcher. A letter of explanation was then sent to each participating faculty member (Appendix D).

Opinionnaires containing the 30 practices considered applicable by a majority of the panel of experts to a college of education classroom were administered during the week of January 17-21, 1977, to all 400-level graduate classes as scheduled by the College of Education. Results were then compiled to determine their extent of agreement.

The Likert Method of Summated Ratings identified by Best (1970, p. 174) as a valuable technique for assessing attitudes of responses was utilized in the opinionnaire. A weighted scale was then assigned to the following five responses to assist the researcher in the analysis of responses received from the 20 faculty members and the 513 graduate students:

	SCALE VALUE
Strongly agree	+2
Agree	+1
Undecided	0
Disagree	-1
Strongly disagree	-2

Sub-totals for each of the five degrees of agreement were obtained from which percentages were derived. The sub-totals for strongly agree and agree were combined to reach a percentage of agreement for the participating faculty members and graduate students.

A weighted scale as described above was used when determining total points for the individual suggestions of practices reacted upon by 20 faculty members and 513 graduate students. Rankings of the suggestions of practices for enhancing creativity in a college of education classroom were obtained according to the number of points that each practice received. The Likert Scale, as discussed by Best (1970), was utilized in reporting results of responses.

Phase four included a summary of findings, analyses of data results, and conclusions and recommendations. Careful study and comparison were given to the responses to the recommended practices received from the panel of experts and the suggestions or practices received from faculty members and graduate students. A table was

designed to indicate the degree of agreement among the panel of experts, faculty members, and graduate students as to the appropriateness of each practice. The following categories were again utilized to group the degrees of agreement:

Greater than 90%

75 - 90%

50 - 74%

Less than 50%

Sub-totals for each of the five degrees of agreement (strongly agree, agree, undecided, disagree, and strongly disagree) were obtained from which percentages were derived. The sub-totals for strongly agree and agree were combined to reach a percentage of agreement for the participating panel of experts, faculty members, and graduate students.

A list of suggestions of practices was then developed for utilization in a college of education classroom. This developed list of suggestions included those practices agreed upon by more than 80% of participating experts, faculty members and graduate students, and/or those practices which were identified a substantial number of times (above the minimum of three) in the researcher's review of the literature. Agreement between experts and faculty members was also greater than 88% and greater than 78% among graduate students. This developed list of 22 suggestions of practices was designed to assist those college of education faculty members who desire to enhance creativity in their classrooms.

Organization of the Study

The report of this study was divided into seven chapters.

Chapter I is comprised of an introduction, statement of the problem, definitions of terms, research questions in the study, assumptions, limitations, and general plan and organization of the study.

Chapter I is comprised of an introduction, statement of the problem, definitions of terms, research questions in the study, assumptions, limitations, and general plan and organization of the study.

Chapter II is devoted to a review of related literature published since 1965. Part I consists of an overview of creativity while Part II of this chapter discusses the development and utilization of the opinionnaires, the use of a panel of experts, and other research tools utilized in the study. A summary of practices identified by the researcher through the literature review is provided.

Chapter III, Part I, provides the complete list of recommended practices derived from a review of literature published since 1965, for the enhancement of creativity in any classroom. Part II of this chapter includes those 39 recommended practices--with a verification statement for inclusion--identified three times by three authors. A discussion of the complete list and the list of 39 recommended practices is presented in Part III.

Chapter IV includes a brief resume of the panel of experts selected to respond to the recommended practices for enhancing creativity in any classroom and to identify those applicable to a college of education classroom. The responses of the panel of experts were analyzed to identify the degrees of agreement to the recommended practices.

Chapter V contains descriptions of East Carolina University and the faculty members' responses to the list of suggestions of practices which was administered in the form of an opinionnaire. An analysis of responses of faculty members identifying degrees of agreement to the suggestions of practices and their applicability to a college of education is presented.

Chapter VI is devoted to the description of graduate students' responses to the list of suggestions of practices which was presented in opinionnaire form. Responses of students were analyzed to identify the degrees of agreement to the suggestions of practices and their applicability to a college of education classroom.

Chapter VII summarizes the findings, analyzes the data results, and presents the list of suggestions of practices developed by the researcher to assist those professors who desire to enhance creativity in a college of education classroom. Conclusions and recommendations for further study are provided.

CHAPTER II

Review Of The Literature

This chapter, which is concerned with practices useful in any classroom to enhance creativity, will be divided into two parts. First, an overview or general discussion of creativity will be included, and; second, the development of opinionnaires and other tools of research utilized in this study will be discussed.

PART I

Overview of Creativity

One of the most distressing problems in this decade has been that of defining, analyzing, and enhancing creativity at all levels of our educational system, particularly at the university level. According to Williams, an assumption often made has been that teachers and professors understand the details of creativity, are skillful in utilizing appropriate techniques, and are able to evaluate the success of their methods (1967, p. 277). Many professionals believe, according to Yamamoto, that our educational programs, namely our graduate programs, should be analyzed to determine the creativity and productivity of faculty members and students (1967, p. 312).

Creative thinking has been considered the highest of functions performed by the human mind and creative production as the highest achievement one can attain, according to Jack Getzels (1969, p. 267); nevertheless, it was not until 1950 that creativity became a major interest to educational research. He stated that creativity was not even mentioned in the 1941 edition of the Encyclopedia of Educational Research. In the category of higher mental processes in the 1950 edition, "creative thinking" was included as a brief subsection of one article related to higher mental processes, and creativity finally gained the status to deserve an independent article (p. 267). It was noted by J. P. Guilford that only 186 books or articles had been published on the subject of creativity through 1950; in contrast, 132 items concerning creativity could be found in the Psychological Abstracts in 1965.

Through a review of the literature since 1965, the researcher noted many varied definitions of creativity but no single generally agreed-upon definition of the term. Getzels (1969) noted that the most widely-used definitions could be classified into three categories according to the emphasis the author placed upon the product, the process, and the subjective experiences. MacKinnon's definition fell into the category of the product--creativity is novel and useful. He suggested that the "criterion is a statistically infrequent response or idea that is adaptive and sustained to fruitation" (1962, p. 267). Included in the second category was the definition offered

by Ghiselin, who thought of creativity as a "process of change and development in the psychic life of an individual leading to invention" (1952, p. 267). Getzels used the definition provided by Maslow to illustrate the third category--experiences. Maslow believed that the "flash of insight" is most crucial regardless of whether anything tangible results. He stated that the "salient issues is not the 'inspired product' but the 'inspired moment'" (1963, p. 267).

Williams (1964) revealed in a study of teacher in-service training that elementary school teachers actually had little understanding of the meaning of creativity in education, thus demonstrating lack of skill in identifying and developing creative potential in students. The same study was replicated in 1966 by Eberle who found that teachers were unable to recognize the most creative students. By providing teachers in-service training discussing the nature of creativity and recognition of creative characteristics, teachers developed creativity and creative thinking.

According to Williams, J. P. Guilford's structure of the intellect stimulated the aim to relate creativity to other mental capacities involved in solving problems (1967, p. 173). From the works of Guilford and others, four main characteristics of intellectual creativity have been identified and discussed by Williams (1967, p. 174-175):

1. Universality: Teachers think of all students as possessing creative potential.
2. Diversity: There are different kinds of creativeness among students.
3. Nature as Process: According to Stein, creativity requires time, results in something novel, and happens in a social context which others accept or refuse to accept.
4. Means of Promotion: Originality of responses, ideas, or products are the result of extensive knowledge.

Williams discussed three kinds of creativity identified by R. L. Mooney (1966). Creativity actualized by one's society helps one in relating to others. A second kind of creativity resulted from interactions that the creator has with oneself and with the knowledge one already has. Product actualization, a third kind of creativity was concerned with the actual development of the product.

Williams (1965) discussed Torrance's four steps by which students act creatively. The first step involved the awareness of problems. Formulation of hypotheses which required the student to incorporate a divergent thinking method was the second step. Fluency, flexibility, originality, and elaboration are some qualities Torrance believed to be necessary for intellectual creative thinking. The

third step required the students to test, retest, and revise their hypotheses. Finally, communicating results to others was an essential step if creative students were concerned with their talents being recognized and utilized by society.

In recent years, more studies have been conducted in the area of creativity, many of which have been related to teaching for creativity. Robert A. Goodale (1970) attempted to identify specific techniques for teachers who desired to enhance creativity in their classrooms by referring to some of the research which has been done in this area. He suggested that research on creativity indicating personality development of the students is more important than kinds of materials utilized to encourage creativity. Psychological studies revealed a mixture of particular necessary and unnecessary traits in creative students as opposed to non-creative students.

A study by Getzels and Jackson (1962) indicated a wide difference in goals and actions between students who were highly creative and those who were highly intelligent. Other researchers have pointed out similar results (Harmon, 1963; Taylor, Smith and Ghiselin, 1963); however, in other studies (Guilford, 1967; Terman, 1954), intelligence has been identified as a necessary component.

Many studies concerned with the environment of the schools have been reported and discussed by T. Christie (1969). Buckhart (1962) studied question-asking behavior of teachers by using a test requiring teachers to ask divergent thinking. Teachers continued to

ask a large number of convergent questions, even when they were aware of their behavior, but they were unable to alter their styles.

In a report by Torrance and Hansen (1965), 90% of teachers' questions to junior high social studies students merely requested reproduction from information available in their books. When studying the behavior of business teachers over five class sessions during a school term, Torrance and Hansen found that 10% of a high creative group of teachers asked divergent questions. Less than 1% of teachers classified in a low creative group asked questions requiring creative thinking.

Yamamoto (1963) attempted to illustrate that creative teachers can provide an environment which encourages creativity and that less creative teachers tend to prevent the development of creative students. Since his study showed no such results, Christie (1970) suggested that there must have been differences in classroom environment which procedures of testing ignored as irrelevant or insignificant.

A factor score from Q-sorts of 24 dimensions of teacher behavior was derived by Wodtke and Wallen (1965), who were interested in noting differences in a warm permissive environment versus a cold controlling environment. The only significant effect was that highly controlling teachers caused or prevented many highly creative students from demonstrating more self-initiated verbal behavior.

According to T. Christie (1970), studies have been performed which indicated that creative abilities as measured by assessment might be enhanced by suitable teaching techniques. Parnes and Brunell (1965)

reviewed forty studies evaluating methods for instructing students to improve their skills involving flexibility, fluency, originality, sensitivity, and elaboration. Ninety percent of the forty studies revealed that the creative production levels of students were increased significantly by programs emphasizing deliberate creative instruction.

Mitchell (1968) reported on the Galeta Union School District Creativity Project which was concerned with discovering new methods for increasing creative thinking of students in elementary schools. This longitudinal study reported the values of the Project held by participating teachers. Emphases were placed upon skills of problem-solving, communication, sensitivity, and self-evaluation. Judgments held by participants were the only results available.

Other studies may be reviewed which have been concerned with enhancing creativity in a classroom environment. McMullan (1976) compared the effectiveness of various methods for enhancing creative problem-solving by students working alone. Tallery (1976) conducted a study which was intended to identify the effects of stimuli upon the performance of creative behaviors. Elementary school children were compared by Ruedi (1975) to learn if open education enhanced creative potential of students. Pearson (1975) studied various aspects of personalities, creativity, and self-concepts of teachers as well as their perceptions of an ideal student. Relationships among these aspects were studied by Pearson and results

indicated that teachers who scored high on creative thinking abilities tended to be more ingenious, fearful, controlled, and submissive.

In other studies, Frost (1976) investigated the effects of cooperation and competition on the creativity expressed by college students. Scores on flexibility, fluency, and originality were found to increase under cooperative conditions. Competition was a factor which was unable to overcome the helpful consequences of cooperation. Leopold (1973) was concerned with providing people with concrete experiences in using materials and media, and to provide average teachers and students the opportunity to express themselves in different ways. Rivell (1971) was interested in finding a body of tested knowledge for teachers of adults concerned with increasing creativity among their students. The relationship between teachers' behaviors, and adult-student creativity in art classes was examined utilizing Carl Rogers' theory who stated that when conditions of psychological safety and freedom are established by teachers, creativity is most likely to appear.

Creativity is often a result of social activities. Stein pointed out that students are affected by their environment in which creativity may be enhanced or inhibited. According to Stanley Czurles, "A child is highly creative until he starts to school. Then, under traditional procedures, almost all our teaching tends to cramp their imagination" (Osborn, 1956, p. 90). Stein (1975) pointed out, however, that change is possible and that whatever has

inhibited students' creativity can be confronted and reversed so that meaningful improvements may continue. Accepting this hypothesis of Stein's, professors and teachers can and must provide environments which enhance all pupils to utilize their creative abilities.

Various techniques for enhancing creative thinking have been suggested, most often without any evidence of their success in the classroom. Getzels (1969) cited several studies which attempted to provide specific practices for enhancing creativity in the classroom. Mearns (1958) suggested that teachers provide a permissive atmosphere which shunned drill. The most extensively studied practice has been Osborn's brainstorming. Meadows and Parnes experimented with problem-solving courses in colleges to demonstrate that practice in brainstorming concludes to creative problem solving. Taylor (1958) and others have found opposing results to brainstorming effects.

Educational research in creativity was a relatively new field for researchers to study, according to Getzels (1969). There appear to have been almost as many viewpoints on creativity as there have been studies. Work on the enhancement of creativity in the field of education has just begun within the present decade with few replications of studies having been conducted.

Many problems have been developed to stimulate creativity in classrooms. Treffinger and Gowan have compiled a list of methods and educational programs to which teachers, researchers, and other interested people may refer when studying the availability of resources.

Included in the list are classroom teaching and creativity, creative instructions, thinking creatively, and other programs.

Goodale (1970) compiled various methods for encouraging creativity in the classroom. He suggested that teachers examine their personalities to observe any characteristics which may inhibit development of creativity within their students. Praise, feedback, and rewards were considered important influences for teachers to utilize.

Strategies suggested by Williams (1968) were included in Goodale's discussion. These included the following: teaching by paradox; teaching by analogy; using examples of scarcity; making guesses; studying creative people; and other methods.

According to Torrance (1967), creativity does not happen in a vacuum; therefore, efforts must be made to enhance creativity in the classroom. There is no one technique for enhancing creativity; therefore, methods of teaching, theories for learning, and characteristics of knowledge must be seriously examined. MacKinnon suggested that procedures and programs be tailored to meet each student's specific needs or possibly for each different type of student; yet, the researcher's review of the literature failed to identify clear and specific examples of teaching behaviors which may influence the creativity of college students.

Torrance stated that enough has been known about factors affecting creative growth since Socrates who saw the importance of asking provocative questions, and Plato who believed in amusing the

mind in order to more accurately discover the "peculiar bent of the genius of each." Nevertheless, there is a need to examine practices used in the classroom which may enhance or inhibit creativity and determine those practices which have the most favorable influence upon students.

MacKinnon reported that many educators have refused to test theories and practices due to the complexities with the uncertainties of neat research design and the obtaining of clear conclusions (1968). Such a study is imperative, however, if researchers desire to assist those professors and teachers who are interested in enhancing creativity in the classrooms and to improve the quality of teaching at the university level.

Providing effective teaching models should be a major priority of colleges and universities that are serious about enhancing creativity in all students. In a research project led by Heist and Wilson (1968), students criticized professors for assigning too many papers, drill-work assignments, and cruel competition for grades. More criticism was placed by the students upon the inadequate functioning of the system than on the structure of the instructional procedures. Major concern of the students dealt with the behaviors or lack of behaviors demonstrated by professors both in and out of the classroom. Parnes (1967) suggested that education can do much to assist students in achieving what Maslow referred to as "self-actualization" regardless of students' inherented abilities. He believed that "many people possess the seeds of creativeness,

but the environment fails to provide the proper nourishment for growth. Therefore, these persons never fully live." With the combined efforts of college faculty and students, an agreement upon valid environmental practices may be developed which may greatly affect the creative endeavors of the American society.

A careful and extensive examination of the literature reviewed in Parts I and II of this chapter and the following chapter furnished the foundation for the development of suggestions of practices fundamental to this study. As the professional literature was reviewed, there was a thorough search for statements with implications for recommended practices to enhance creativity in the classroom.

PART II

Development of Instruments

An information form frequently utilized to measure attitudes or opinions of respondents is considered an opinionnaire. Best (1970) indicated that researchers must depend upon what the respondents say are their beliefs, which is in the area of opinion. By involving students through an expression of their reactions to specific statements, the researcher can infer that their responses are indicators of their true attitudes.

Limitations may be identified with opinionnaires as is possible with other tools of research. Respondents may tend to hide their real beliefs to express opinions accepted by their society. Best pointed out that the respondents' desire to be approved socially causes many attitudes to be unrelated to their actual beliefs. One method often utilized, according to Best, requires the respondents to indicate their degree of agreement or disagreement with statements about a particular subject in question.

A method found valuable for assessing attitudes of responses is the Likert Method of Summated Ratings. Best suggested this method to researchers as a suitable tool obtaining opinions of respondents. Steps for constructing a Likert-style scale include the gathering of data about a particular subject, without regard to their correctness, if they were substantiated by a satisfactory number of

authors. Statements should then be administered to a number of subjects--a panel of experts in this study. Only those items which are substantially agreed upon should be retained in order to eliminate ambiguous or different statements.

One technique for analyzing the opinion scale, according to Best, is to indicate percentage responses for each item included in the opinionnaire. For this kind of analysis, Best suggested the utilization of the following responses: strongly agree, agree, undecided, disagree, and strongly disagree. To report percentage responses, the two outside categories must be combined: strongly agree and agree; disagree and strongly disagree.

Best indicated that the Likert scaling method must assign a scale value to each of the five responses; thus the instrument provided a total score for each respondent. The researcher, therefore, decided to utilize the following values to analyze responses from the panel of experts, faculty members, and graduate students:

	SCALE VALUE
Strongly agree	+2
Agree	+1
Undecided	0
Disagree	-1
Strongly disagree	-2

As pointed out by Best, there is no basis for belief that the five positions on a Likert-type scale are spaced equally or that

the items are of equal value in agree--or disagree--terms. Respondents may tend to answer according to what they think are the best beliefs instead of what they actually believe are best. Nevertheless, the method of opinionnaires has advantages and is a useful technique in social research. For this reason, the researcher selected this method as a useful one for this study.

Kerlinger (1973) indicated content validation of questionnaires and opinionnaires consists essentially in judgment. Items must be studied and weighed for their considered representativeness of the universal frame; therefore, items might be judged for their relevance to the property the researcher intends to measure. A satisfactory procedure may be the selection of a panel of experts in the field being studied who judge the content of the items included in the opinionnaire. Judges must be provided with precise directions for making judgments and specifications of what they are to judge. A method for pooling the individual judgments of the experts could then be utilized.

The mail opinionnaire, the type of survey used with the panel of experts, has been a popular method used by educators. Kerlinger suggested that if the opinionnaire were to be considered useful, every effort must be made to obtain returns of at least 80 to 90% or more. If returns were high, valid generalizations can be made. VanDalen (1966) suggested that mail opinionnaires reach the respondents promptly at little expense to the researcher. This

method was utilized in this study to obtain degrees of agreement or disagreement from a selected panel of experts with 100% participation.

A restricted or closed form was utilized in this study. VanDalen (1966) indicated that a closed form assists respondents in keeping their minds affixed to the subject and promote tabulation and analyses of data.

The ordinal scale which was used by the researcher ordered the values on the scale from highest to lowest. The categories of the ordinal scale, according to Lindeman, are arranged in order according to significance of the characteristic that each item represents. Such a scale is appropriate when the researcher is able to express a characteristic quantitatively but unable to define the units of measurement which are equal at all points on the ordinal scale. Best (1970) pointed out that when two or more items receive the same score within the ordinal scale, each item is assigned the mean rank position of the tie scores.

A frequently-used method to describe scores in relation to the position of items within an ordinal scale is the percentile. Best (1970) defined the percentile as the point in the arrangement below which a particular percentage of scores fall. Some percentiles which are especially important are called quartiles and deciles, both of which are appropriate terms to be utilized by the researcher in this study.

CHAPTER III

Lists Of Recommended Practices For Enhancing Creativity

This chapter which is devoted to the identification of recommended practices for enhancing creativity in a college of education classroom, will be divided into three parts. First, the complete list of recommended practices as identified by the researcher in a review of literature will be provided; second, only those practices identified by the researcher as suggestions for enhancing creativity in any classroom by three or more authors will be presented, and; third, the complete list of approximately 1000 recommended practices and the list of 39 recommended practices will be discussed.

PART I

Complete List of Recommended Practices

As literature concerned with creativity was reviewed by the researcher, an extensive list of recommended practices was identified as being helpful for teachers desiring to enhance creativity in their classroom. The complete list of recommended practices for enhancing creativity in any classroom are identified according to authors as follows:

Abelson, Philip H.

1. Sharpen judgment through group interaction (1972, p. 198).
2. Help students develop self-control (1972, p. 198).
3. Help students desire the accomplishment of common goals (1972, p. 199).
4. Receive new ideas enthusiastically (1972, p. 202).

Adams, James F.

1. Use the discovery method (1976, p. 282).
2. De-emphasize group participation with conforming demands (1976, p. 281).
3. Encourage students to build a memory store (1976, p. 281).
4. Allow students to work out their own interests (1976, p. 282).

Alamshah, William H.

1. Motivate for creativity (1967, p. 306).
2. Provide openness (1967, p. 310).
3. Provide an atmosphere of competence (1967, p. 313).

Ashner, Mary Jane, & McGuire, Carson

1. Work just this side of frustration where all of the students' abilities are required (1965, p. 191).
2. Provide freedom for students (1965, p. 192).
3. Teach discipline and self-control, but use flexibly (1965, p. 193).
4. Identify and stress aesthetic values (1965, p. 193).

Boos, Robert

1. Encourage self-education (1971, p. 276).
2. Encourage students to work to the limit of their powers (1971, p. 276).
3. Demonstrate competence (1971, p. 276).
4. Demonstrate integrity (1971, p. 276).
5. Demonstrate authenticity (1971, p. 276).
6. Emphasize discovery techniques (1971, p. 277).
7. Nurture an appetite for the unknown (1971, p. 277).
8. Provide a comfortable and enjoyable climate (1971, p. 277).
9. Encourage originality (1971, p. 277).
10. Provide a future-oriented climate (1971, p. 277).
11. Provide multiple approaches to problem solving (1971, p. 277).
12. Provide student-centered environment (1971, p. 277).
13. Provide activity-centered environment (1971, p. 277).
14. Provide future-centered environment (1971, p. 277).
15. Emphasize self-actualization and self-realization (1971, p. 277).
16. Provide freedom for students (1971, p. 278).
17. Allow students to err without recrimination (1971, p. 278).
18. Respect the worth of all students (1971, p. 279).
19. Develop a democratic climate (1971, p. 280).

Brown, George I.

1. Allow for change (1970, p. 210).
2. Encourage spontaneity (1970, p. 213).
3. Use questions to promote symbolic analogy (1970, p. 213).
4. Encourage more awareness of reality (1970, p. 215).

Brown, J. Douglas

1. Develop an inquiring mind (1972, p. 165).
2. Maintain a climate of academic freedom (1972, p. 168).
3. Provide for freedom of mind and spirit (1972, p. 170).

Brubaker, Dale L.

1. Be an example of a creative person (1968, p. 207).

Bruch, Catherine

1. Motivate for creativity (1967, p. 254).
2. Allow freedom to explore ideas (1967, p. 254).
3. Provide brainstorming activities (1967, p. 254).
4. Ask divergent-thinking questions (1967, p. 254).
5. Use discovery methods (1967, p. 254).
6. Use inquiry methods (1967, p. 254).
7. Use logic methods (1967, p. 254).
8. Use problem-solving methods (1967, p. 254).
9. Allow time for the development of students (1967, p. 256).
10. Value evaluation without making final judgments (1967, p. 256).
11. Allow students to participate in their own interests (1967, p. 256).

12. Use inventive thinking (1972, p. 71).
13. Free the students from evaluation (1972, p. 71).
14. Guide and truly care about students (1972, p. 72).
15. Maintain an honest atmosphere (1972, p. 72).
16. Provide a lenient atmosphere (1972, p. 72).

Brunswick, Joan M.

1. Encourage learning to derive from interests, motivations, and curiosity of students (1971, p. 200).
2. Maintain flexibility in content, methods, and materials (1971, p. 200).

Burdin, Joel L., & McAulay, John D.

1. Create an open environment (1971, p. 92).
2. Encourage students to ask questions (1971, p. 92).
3. Encourage students to go beyond superficial conclusions (1971, p. 92).
4. Arouse students' curiosity (1971, p. 244).
5. Encourage exploration (1971, p. 265).
6. Involve students in planning (1971, p. 265).
7. Involve students in decision-making activities (1971, p. 265).
8. Maintain flexibility (1971, p. 265).
9. Encourage self-direction (1971, p. 266).
10. Use frustration as a way to solve problems (1971, p. 266).
11. Involve brainstorming sessions (1971, p. 267).

12. Respect all questions and ideas (1971, p. 268).

13. Encourage initiative of students (1971, p. 268).

14. Encourage exploration and curiosity (1971, p. 269).

15. Provide trial and error experiences (1971, p. 269).

Chickering, Arthur W.

1. Provide creative problem-solving situations (1971, p. 49).

2. Use a more participative approach (1971, p. 53).

3. Involve students in decisions, purposes, and actions (1971, p. 54).

Chorness, Maury H.

1. Provide a climate in which external evaluation is absent (1966, p. 296).

2. Provide psychological freedom (1966, p. 296).

3. Understand students empathetically (1966, p. 296).

4. Accept students as having unconditional worth (1966, p. 296).

Christie, T.

1. Provide a responsive atmosphere (1970, p. 27).

Clark, Bill M., & Ramsey, Marl E.

1. Provide for small-group participation (1973, p. 65).

2. Involve students in developing educational goals (1973, p. 65).

3. Coordinate learning rather than dispensing knowledge (1973, p. 65).

4. Discuss more unknowns than knowns (1973, p. 67).

5. Share students' opinions and feelings (1973, p. 67).
6. Arrange classrooms to maximize opportunities for students to see, hear, and participate (1973, p. 69).
7. Develop the concept of shared leadership (1973, p. 69).
8. Practice suspended judgment (1973, p. 70).

Clawson, Robert

1. Develop a motivation for creativity (1970, p. 7).
2. Provide a free-wheeling environment (1970, p. 88).
3. Strive for a quantity of tasks (1970, p. 89).
4. Provide a permissive atmosphere in which new ideas are encouraged (1970, p. 7).
5. Encourage potentially good ideas (1970, p. 88).

Cohen, Steward

1. Encourage fluency (1974, p. 174).
2. Encourage originality (1974, p. 174).
3. Provide for discovery (1974, p. 174).
4. Provide for experimentation (1974, p. 174).
5. Encourage exploration (1974, p. 174).
6. De-emphasize evaluation in learning (1974, p. 176).
7. Be open to new ideas (1974, p. 176).
8. Accept students as worthy (1974, p. 176).
9. Accept students' hypotheses (1974, p. 176).
10. Emphasize a student-oriented philosophy (1974, p. 176).

Cottle, Thomas J.

1. Be on the same side as students so that goals may be attained (1970, p. 26).

Covington, Martin V.

1. Teach students how to use freedom to create (1968, p. 23).
2. Encourage students to work with complex tasks (1968, p. 24).
3. Guide students in creative tasks (1968, p. 24).
4. Work flexibly (1968, p. 24).
5. Encourage imaginative work (1968, p. 24).
6. Emphasize innovation and expression (1968, p. 25).
7. State problems in unbiased ways (1968, p. 25).
8. Use familiar metaphors and similies (1968, p. 25).
9. Encourage self-direction (1968, p. 29).
10. Encourage self-determination (1968, p. 29).
11. Use computers to guide students through an individualized sequence of learning (1968, p. 29).

Crutchfield, Richard S.

1. Individualize instruction (1967, p. 196).
2. Encourage open mindedness (1967, p. 196).
3. Reinforce diversity of responses (1967, p. 199).
4. Reinforce uniqueness of responses (1967, p. 199).
5. Emphasize curiosity (1967, p. 201).
6. Emphasize intuitiveness (1967, p. 201).

7. Emphasize deferred judgments (1967, p. 201).

8. Enhance readiness for fluency of ideas (1967, p. 198).

Davis, Gary

1. Include brainstorming activities (1969, p. 98).

2. Include attribute listing activities (1969, p. 98).

3. Include morphological synthesis (1969, p. 98).

4. Include synectic approaches (1969, p. 99).

DeBono, Edward

1. Use lateral thinking to explore and encourage ideas (1971, p. 8).

2. Search for alternate ways of studying things (1971, p. 48).

3. Shift attention to other areas to enlarge context of problems (1971, p. 48).

4. Shift entry points to problems (1971, p. 48).

5. Be less rigid during vertical thinking (1971, p. 51).

6. Provide provocative techniques in order to introduce discontinuity (1971, p. 51).

7. Consider crucial factors which are practically insignificant (1971, p. 54).

8. Utilize limiting conditions or boundaries that students may look in toward the problem or outward at boundaries to consider what they really are (1971, p. 56).

9. Provide either/or situations to remove inflexibility (1971, p. 55).

10. Use "cross-fertilization" techniques (1971, p. 102).
11. Use analogies to generate ideas (1971, p. 105).
12. Provide brainstorming activities (1971, p. 115).
13. Maintain open-endedness (1971, p. 184).
14. Encourage open-ended ambiguity (1971, p. 167).
15. Maintain a balance between freedom and control (1971, p. 184).
16. Bring about distortions by starting with change (1971, p. 177).
17. Look at things in different ways (1971, p. 171).
18. Use group practice sessions (1971, p. 159).
19. Use methods introducing discontinuity (1971, p. 157).

Derews, Elizabeth, & McGuire, Carson

1. Teach verbal interaction deliberately (1965, p. 176).
2. Help students develop thinking skills so they can move more easily toward self-actualization (1965, p. 176).
3. Be an excellent example (1965, p. 176).
4. Use other models through films, tapes, books (1965, p. 176).
5. Help students see the wide range of possibilities (1965, p. 177).
6. Illustrate how others see reorganization or invent the future (1965, p. 177).
7. Incorporate moral integrity and courage into materials (1965, p. 177).

8. Help students value nonverbal learning (1965, p. 178).
9. Use sensory stimulation (1965, p. 178).
10. Encourage intuitive methods for learning (1965, p. 178).

DeRoche, Edward

1. Demonstrate respect for students and their ideas (1968, p. 239).
2. Provide problem-solving practices (1972, p. 134).
3. Encourage sensitivity to problems (1972, p. 134).
4. Emphasize ideation (1972, p. 134).
5. Demonstrate respect for students (1972, p. 134).
6. Encourage brainstorming activities (1972, p. 134).
7. Foster self-actualization (1972, p. 134).
8. Encourage effective human relations (1972, p. 134).
9. Provide openness for change (1972, p. 134).
10. Respect novel ideas (1972, p. 134).
11. Encourage students to positive self-concepts (1972, p. 134).

Devito, Alfred

1. Provide more flexibility in programs (1971, p. 211).
2. Develop ways to prime the idea mechanism (1971, p. 212).
3. Discipline the mind for creative production (1971, p. 215).
4. Promote free wheeling (1971, p. 217).
5. Develop provocative situations (1971, p. 230).
6. Establish atmosphere where creative activities are necessary (1971, p. 230).
7. Develop divergent and convergent thinking (1971, p. 231).

8. Encourage self-expression from students (1971, p. 244).
9. Analyze problems by sub-dividing segments (1971, p. 239).
10. Organize recall content into creative activities (1971, p. 242).

Edwards, M. O.

1. Encourage students to practice deferred judgments (1968, p. 34).
2. Provide activities for attribute listing (1968, p. 34).
3. Provide activities for practicing synectics (1968, p. 34).
4. Provide activities for practicing morphological analysis (1968, p. 34).
5. Provide activities for practicing problem-solving (1968, p. 34).
6. Maintain a secure environment in which all ideas are welcome (1968, p. 34).
7. Emphasize the importance of trying new approaches (1968, p. 34).
8. Work on things interesting to the students (1968, p. 34).
9. Encourage "cross-fertilization" of ideas in order that students may teach and learn from each other (1968, p. 34).
10. Encourage students to be open to various stimuli (1968, p. 34).
11. Work problems of progressively greater difficulty (1968, p. 34).
12. Develop openness (1968, p. 34).

13. Provide mind-stretching exercises which will develop attitudes of innovations (1968, p. 34).

Elkind, David

1. Provide problem-solving activities (1974, p. 100).

Feldhusen, John F., Bahkke, Susan J., & Treffinger, Donald J.

1. Encourage students to generate original ideas (1970, p. 48).

Flanagan, John C.

1. Use beginning tasks requiring specific behaviors and move through psychological analysis in order that others may review processes, inferences, and hypotheses (1966, p. 93).

Georgiades, William, & Michael, Joan B.

1. Provide freedom to experiment (1968, p. 164).
2. Keep class size between ten and 14 (1968, p. 169).
3. Provide team teaching with large groups (1968, p. 169).

Gibb, Jack R.

1. Share ideas with others for stimulation (1972, p. 26).
2. Maintain emotional climate with high trust and low fear (1972, p. 28).
3. Maintain spontaneity (1972, p. 28).
4. Provide open-strategy and planning (1972, p. 28).

Glasser, William

1. Allow students to discover important information on their own (1969, p. 206).

Gleason, Ralph J.

1. Provide opportunities and tools to help students explore their own creativity (1968, p. 8).
2. Welcome original and unexpected responses in the college classroom (1968, p. 11).
3. Be aware and tolerant of students who are imaginative and innovative (1968, p. 11).
4. Provide an atmosphere which permits students to refuse to accept the tested as their goal and to go beyond the tested (1968, p. 13).

Goodale, Robert

1. Reward creative responses (1970, p. 96).
2. Teach by paradox (1970, p. 96).
3. Use open-ended questions (1970, p. 98).

Gowan, John Curtis

1. Emphasize ideational fluency (1967, p. 79) (a).
2. Emphasize expressional fluency (1967, p. 79) (a).
3. Emphasize originality (1967, p. 79) (a).
4. Respect unusual questions (1967, p. 80) (a).
5. Respect students' values (1967, p. 81) (a).
6. Provide non-evaluative practices (1968, p. 81) (a).
7. Combine evaluation with cause and consequences (1967, p. 81) (a).
8. Emphasize non-conformity (1967, p. 81) (a).
9. Provide learning involving cause-effect relationships (1967, p. 82) (a).

10. Encourage discrimination between self and others (1967, p. 82) (a).
11. Provide integration of learning (1967, p. 82) (a).
12. Encourage discrimination between reality and fantasy (1967, p. 82) (a).
13. Encourage discrimination between concrete and the symbolic (1967, p. 82) (a).
14. Encourage discrimination between ideal self and real self (1967, p. 82) (a).
15. Encourage discrimination between means and ends (1967, p. 82) (a).
16. Help students value things (1967, p. 221) (a).
17. Help students direct aggressiveness into constructive channels (1967, p. 222) (a).
18. Encourage discrimination between subjective and objective (1967, p. 82) (a).
19. Provide integration of learning (1967, p. 82) (a).

Groch, Judith

1. Excite students' curiosity (1969, p. 309).
2. Be a model to be surpassed (1969, p. 309).
3. Achieve balance between freedom and content (1969, p. 312).
4. Cultivate diversity (1969, p. 318).

Guilford, J. P.

1. Provide opportunities for elaboration (1967, p. 112).
2. Provide opportunities for brainstorming (1967, p. 113).

3. Recognize the complete range of intellectual qualities (1967, p. 122).
4. Provide opportunities for suspended judgment (1969, p. 113).
5. Expose students to appropriate examples in order for them to discover principles for themselves (1967, p. 122).

Guilford, J. P., & Tenopyr, Mary

1. Develop basic abilities (1968, p. 35).
2. Emphasize understanding (1968, p. 35).
3. Encourage students to be initiative in their discoveries and explanations (1968, p. 38).
4. Give tests of short completion questions that require some transfer recall (1968, p. 39).
5. Utilize small groups for discussing problems (1968, p. 39).
6. Provide brainstorming activities (1968, p. 44).
7. Provide appropriate motivation (1968, p. 44).
8. Use programmed instructional techniques (1968, p. 44).
9. Provide attribute listing activities (1968, p. 44).

Hallman, Ralph J.

1. Remove pressures to conform (1967, p. 325).
2. Encourage self-direction and self-responsibility (1967, p. 325).
3. Encourage self-initiated learning (1967, p. 328).
4. Set up nonauthoritarian learning environments (1967, p. 327).
5. Encourage students to over-learn (1967, p. 328).

6. Stimulate students to find new connections among data (1967, p. 328).
7. Encourage imagination (1967, p. 328).
8. Encourage students to take intellectual risks (1967, p. 328).
9. Encourage students to express ideas that seem ridiculous (1967, p. 328).
10. Defer judgments (1967, p. 328).
11. Minimize the importance of error (1967, p. 328).
12. Encourage students to probe for structural and spatial relationships among things (1967, p. 328).
13. Maintain flexibility (1967, p. 328).
14. Encourage various approaches to problems (1967, p. 328).
15. Ask open-ended questions (1967, p. 329).
16. Help students cope in frustration and failure (1967, p. 330).
17. Emphasize total structures rather than additive elements (1967, p. 330).
18. Encourage students to consider problems as wholes (1967, p. 329).
19. Ask questions which encourage exploration (1967, p. 329).

Harris, L. Dale

1. Stimulate imagination of students (1971, p. 60).
2. Encourage students to believe they are sometimes capable of doing the impossible (1971, p. 60).
3. Use problem-solving techniques (1971, p. 61).
4. Provide problems giving insufficient data for solutions (1971, p. 63).

5. Involve students in evaluation (1971, p. 63).

6. Eliminate traditional competition for grades (1971, p. 65).

7. Encourage cooperation among students (1971, p. 65).

8. Develop a qualifying system in which students qualify for problem solutions (1971, p. 65).

9. Assist students in comprehending content (1971, p. 63).

Hausman, Jerome J.

1. Accept students as being creative (1968, p. 223).

2. Relate inventions of one person to what others are doing (1968, p. 223).

3. Encourage feedback (1968, p. 224).

4. Encourage invention (1968, p. 224).

5. Encourage intuition (1968, p. 224).

6. Encourage use of visual judgments (1968, p. 224).

Heist, Paul, & Wilson, Robert

1. Design the course work in a manner which will promote the growth of a wholesome skepticism (1968, p. 199).

2. Provide each individual with different experiences which will assist him or her in grasping the more complicated and demanding aspects of course objectives (1968, p. 201).

3. If and when possible, involve some of the students in aspects or phases of the instructor's own research to involve them in the excitement of research and real scientific problem (1968, p. 202).

4. Stress the importance of personalization (1968, p. 194).
5. Provide realistic goals (1968, p. 197).
6. Promote more active involvement of students in planning and carrying out their own learning experiences (1968, p. 197).
7. Understand students' characteristics and general motivation (1968, p. 198).
8. Promote the growth of wholesome skepticism (1968, p. 199).
9. Provide for flexibility (1968, p. 199).
10. Provide a degree of freedom (1968, p. 199).
11. Provide a laboratory situation (1968, p. 202).
12. Provide observations of teacher-scholar in the process of thinking through solutions to problems (1968, p. 202).

Hewett, Stanley

1. Emphasize problem-solving activities (1970, p. 8).

Hophan, Irene, & Peters, Mary M.

1. Provide freedom to explore (1968, p. 289).
2. Refrain from criticism (1968, p. 289).
3. Help students choose appropriate solutions to problems (1968, p. 293).

Hoskin, Barbara, & Swick, Kevin

1. Provide a less authoritarian environment (1973, p. 544).
2. Encourage curiosity (1973, p. 544).
3. Encourage independent thinking (1973, p. 544).
4. Encourage independent judgment (1973, p. 544).
5. Encourage a willingness to take risks (1973, p. 544).

Jaccoby, Jacob

1. Understand students empathetically (1968, p. 252).

Jackson, Susan

1. Provide nonevaluative activities (1973, p. 561).
2. Encourage elaboration (1973, p. 559).

Kneller, George F.

1. De-emphasize reliance on textbooks (1965, p. 76).
2. Utilize tutorial system rather than lectures (1965, p. 76).
3. Encourage originality (1965, p. 78).
4. Enhance fluency (1965, p. 79).
5. Emphasize freedom of the mind (1965, p. 79).
6. Develop appreciation of novelty (1965, p. 79).
7. Emphasize spontaneous expression (1965, p. 81).
8. Encourage self-initiated learning (1965, p. 85).
9. Be sensitive to problems (1965, p. 84).
10. Constantly probe and unsettle students' minds (1965, p. 84).
11. Provide opportunities for students to be unsupervised (1965, p. 85).
12. Cultivate the students' senses (1965, p. 85).
13. Help students gain knowledge of their own personhood (1965, p. 85).
14. Assist students in gaining faith in their thoughts and ideas (1965, p. 90).
15. Encourage students to respond to life in all its aspects (1965, p. 92).

16. Encourage an awareness of various ways to approach, know, and experience the world (1965, p. 92).
17. Be a part of students' attitudes toward life (1965, p. 94).
18. Develop techniques of insight-hunting by students (1965, p. 97).
19. Meet with students as individuals (1965, p. 98).
20. Express to students the paradox of life (1965, p. 98).

LaBelle, Beverly M.

1. Provide problem-solving situations (1974, p. 58).
2. Provide activities allowing peer-teaching (1974, p. 58).

Lazar, Ruth S.

1. Be sensitive to students' problems (1972, p. 94).
2. Challenge life with novel ideas (1972, p. 94).
3. Use brainstorming activities (1972, p. 95).
4. Use attribute-listing techniques (1972, p. 95).
5. Use checklists to force more ideas (1972, p. 95).
6. Produce a quantity of solutions (1972, p. 95).
7. Encourage a diversity of solutions (1972, p. 95).
8. Encourage quantity of ideas to breed quality (1972, p. 95).
9. Welcome free wheeling from students (1972, p. 95).
10. Use group problem-solving projects with students (1972, p. 96).
11. Free students to revise their knowledge (1972, p. 96).
12. Free students to explore the unknown (1972, p. 96).
13. Free students to make speculations (1972, p. 96).

MacKinnon, Donald W.

1. Promote an environment which is "hep" to today's world (1968, p. 155).
2. De-emphasize participation within groups which require conformity (1968, p. 154).
3. Provide opportunities for more advanced students to be involved with their own interests (1968, p. 154).
4. Provide effective and diverse models who are creative individuals (1968, p. 155).
5. Offer an appreciation and concern for theoretical ways of thinking (1968, p. 155).
6. Encourage students to identify problems and design their own research procedures (1968, p. 156).
7. Show an appreciation for aesthetic thinking (1968, p. 155).
8. Demonstrate concern for the transfer of training from one subject to another (1968, p. 159).
9. Use analogies, similies, and metaphors (1968, p. 159).
10. Engage in imaginative play (1968, p. 159).
11. Refrain from accepting facts in order to comprehend them in some larger context (1968, p. 159).
12. Strive to reach a deeper understanding inherent in ideas (1968, p. 163).
13. Allow the more able students autonomy and reward behavior which may disturb the harmony of the classroom (1965, p. 164).

14. Provide time for students to work out their own interests (1965, p. 165).
15. De-emphasize participation in groups which demand conformity (1965, p. 165).
16. Flexibly utilize self-discipline and control (1965, p. 166).
17. Assist the students in their openness to possibilities of careers (1965, p. 170).
18. Remove pressures which cause students to prematurely solve their identity problems (1965, p. 170).
19. Emphasize the imagination among students (1965, p. 170).
20. Provide the students with a model which they can identify (1965, p. 170).
21. Assist students as they explore a diversity of ideas until the appropriate one is identified (1965, p. 171).
22. Encourage students to seek deeper meaning and implications (1966, p. 197).
23. Grant the students more autonomy (1966, p. 198).
24. Train students in critical judgments (1967, p. 235).
25. Encourage students to be open minded (1967, p. 235).
26. Frequently discuss fantastic ideas (1967, p. 235).
27. Set goals at a level which will challenge students (1967, p. 235).
28. Assist students in overcoming obstacles (1967, p. 235).
29. Require the students to complete research projects, term papers, etc. (1967, p. 235).

Mars, David

1. Restructure the reward systems (1971, p. 274).
2. Maintain a less rigid classroom (1971, p. 274).
3. Demonstrate a belief in creativity (1971, p. 274).

Massialas, Bryon G., & Zevin, Jack

1. Move from the easy to the more difficult (1967, p. 16).
2. Make divergent thinking legitimate (1967, p. 16).
3. Free students from the threat of evaluation (1967, p. 16).
4. Capitalize on students' interests (1967, p. 22).
5. Serve as a model (1967, p. 22).
6. Encourage self-concepts (1967, p. 22).
7. Capitalize on competition (1967, p. 22).
8. Emphasize inquiry (1967, p. 24).
9. Involve the students in the formulation and testing of ideas (1967, p. 24).
10. Provide a nondirective role (1967, p. 25).
11. Test alternatives (1967, p. 25).
12. Encourage students to play their hunches (1967, p. 26).
13. Encourage students to explore for answers (1967, p. 96).
14. Provide speculative climate (1967, p. 96).
15. Redirect students' original questions (1967, p. 97).
16. Reward creative thinking (1967, p. 97).
17. Refuse to give missing parts to the enigma (1967, p. 106).
18. Rephrase statements to help discussions (1967, p. 108).
19. Redirect questions to help discussions (1967, p. 108).

20. Reward imaginative thought (1967, p. 108).

21. Provide climate where students live with uncertainties (1967, p. 124).

22. Encourage students to search for alternatives (1967, p. 108).

23. Provide a nonthreatening environment where receptive listening is conducive (1967, p. 124).

24. Promote gamelike environment (1967, p. 124).

25. Give thought-provoking materials (1967, p. 194).

26. Encourage students to analyze strange materials (1967, p. 193).

May, Rollo

1. Encourage students to face realities of experiences (1975, p. 26).

McCandless, Boyd R.

1. Maintain sufficient flexibility (1976, p. 257).

McKeachie, Wilbert J.

1. Encourage cooperation (1969, p. 202).

2. Provide flexibility in subject matter (1969, p. 202).

3. Provide more alternatives (1969, p. 203).

4. Provide two-way interactions (1969, p. 204).

Mead, Margaret

1. Provide models by which students can explore (1967, p. 168).

2. Experiment with the senses (1967, p. 171).

Michael, William B.

1. Provide self-discovery activities (1968, p. 48).

2. Encourage students to develop transfer capabilities (1968, p. 48).

3. Encourage and reward self-directing experiences (1968, p. 48).
4. Provide alternative ways for problem-solving (1968, p. 48).
5. Develop a scholarly attitude (1968, p. 49).
6. Encourage curiosity (1968, p. 49).
7. Encourage self-confidence (1968, p. 49).
8. Encourage competitiveness (1968, p. 49).
9. Encourage skepticism (1968, p. 49).
10. Encourage independent thinking (1968, p. 49).
11. Maintain flexibility (1968, p. 49).
12. Use problem-solving processes (1968, p. 49).
13. Provide independent study (1968, p. 49).
14. Encourage innovation (1968, p. 49).
15. Use group procedures (1968, p. 52).
16. Test new strategies (1968, p. 52).
17. Provide chance for students to have access to teachers (1968, p. 52).
18. Seek balance between "sufficient latitude" to allow uniqueness of expression and "sufficient structure" to allow students security in progress (1968, p. 53).
19. Consider students as creative people (1968, p. 53).
20. Relate inventions of one person to inventions of others (1968, p. 53).
21. Stress the importance of intuition (1968, p. 53).

22. Stress the importance of feedback (1968, p. 53).
23. Stress the importance of invention (1968, p. 53).
24. Encourage students to make visual judgments (1968, p. 53).
25. Emphasize decision-making behavior (1968, p. 241) (b).
26. Work together toward common goals (1968, p. 245) (b).
27. Free oneself from publishing and college committees to spend more time with students (1968, p. 245) (b).
28. Reward creative behavior (1968, p. 252) (b).
29. Emphasize open communication in a non-threatening atmosphere (1968, p. 252) (b).
30. Give exciting and appropriate assignments (1962, p. 252).
31. Use tests including simple completion items where students are free to give novel and imaginative answers (1968, p. 256).
32. Encourage continued expression of creative endeavor (1968, p. 259).
33. Use open-book tests (1968, p. 259).
34. Use checklists (1968, p. 259).
35. Provide freedom to students (1968, p. 260).

Mohan, Madan

1. Encourage more productive thinking (1973, p. 182).
2. Decrease routine activities (1973, p. 182).
3. Decrease amount of teacher talk (1973, p. 182).
4. Encourage more pupil talk (1973, p. 182).

Mooney, Ross L.

1. Encourage mutual communication (1967, p. 210).
2. Encourage freedom of expression (1967, p. 211).
3. Encourage openness (1967, p. 211).

Moustakas, Clark

1. Respect individuality of students (1967, p. 179).
2. Identify individual interests and needs (1967, p. 179).
3. Be open to new experiences (1967, p. 179).
4. Listen and understand students (1967, p. 179).
5. Participate in experiences as new ventures (1967, p. 179).
6. Respect students' perceptions (1967, p. 179).
7. Allow freedom for decision-making (1967, p. 182).
8. Relate subject matter to students; arouse their interests (1967, p. 182).
9. Accept students' tempo and pace (1967, p. 184).
10. Provide many resources (1967, p. 184).
11. Treat students as individuals (1967, p. 184).

Newland, T. Ernest, & Thurstone, Thelma G.

1. Provide class time to make and test judgments (1965, p. 41).
2. Encourage the imagination of students (1965, p. 81).
3. Teach concepts and relationships in terms of probability (1965, p. 79).
4. Help students identify their strengths and weaknesses (1965, p. 83).

5. Help students develop talents for important accomplishments (1965, p. 83).
6. Plan new problems and sharpen old ones (1965, p. 86).
7. Seek alternative solutions (1965, p. 86).

Moller, Ruth

1. Provide non-verbal activities to assist students in becoming more aware of themselves in their environment but still guiding them toward solving the problems (1971, p. 262).
2. Provide sensory stimulation (1971, p. 263).

Offner, David H.

1. Present realistic challenges (1967, p. 17).
2. Incorporate idea-generating methods (1967, p. 16).
3. Provide flexibility (1967, p. 16).
4. Plan assignments allowing completion, evaluation, and presentation (1967, p. 16).

Parnes, Sidney J.

1. Develop but discipline the imagination (1971, p. 24).
2. Maintain flexibility (1971, p. 27).
3. Utilize problem-solving principles (1971, p. 27).
4. Maintain an open mind (1971, p. 34).
5. Encourage cognitive skills of productive thinking as having an important place in the curriculum (1971, p. 33).
6. Stress the use of creative films, demonstrations, programmed materials, and other methods (1966, p. 230).

7. Encourage deferred judgments (1966, p. 242).
8. Encourage free-wheeling (1966, p. 242).
9. Decrease class enrollments (1967, p. 226).
10. Provide freedom from conformity (1967, p. 227).
11. Increase empathy and rapport (1967, p. 227).
12. Encourage checklist procedures (1967, p. 35).
13. Encourage note-taking (1967, p. 36).
14. Arrange chairs in a semi-circle (1967, p. 36).
15. Use small groups for teamwork (1967, p. 36).
16. Allow students to serve as leaders of small groups (1967, p. 36).

Parnes, Sidney J., & Meadows, Arnold

1. Encourage students to produce ideas and judge later (1966, p. 312).
2. Use attribute listing (1966, p. 312).
3. Use checklist procedures (1966, p. 312).
4. Use forced-relationship methods (1966, p. 312).
5. Encourage note-taking (1966, p. 312).
6. Set deadlines for idea productions (1966, p. 312).
7. Provide times and places for idea productions (1966, p. 312).
8. Help students sense problems in their lives (1966, p. 312-313).
9. Help students define and solve problems creatively (1966, p. 313).
10. Help students list all facts related to problems (1966, p. 313).

11. Use informal methods to encourage group participation (1966, p. 313).
12. Use small groups in many sessions for idea production (1966, p. 313).
13. Allow all students to serve as leaders of small groups (1966, p. 313).
14. Arrange chairs in semi-circles (1966, p. 313).
15. Provide creative problem-solving activities (1966, p. 313).

Passow, Harry A.

1. Try new ways to problem-solving (1965, p. 274).
2. Develop self-initiated learning (1965, p. 278).
3. Encourage students to do things on their own (1965, p. 278).
4. Provide a responsive environment (1965, p. 278).
5. Develop students' self-concepts about their potentialities (1965, p. 278).
6. Identify uniqueness of students (1965, p. 279).
7. Develop sensitivity to problems (1965, p. 279).
8. Encourage quantity of ideas (1965, p. 279).
9. Encourage originality (1965, p. 279).
10. Group students based on divergent-thinking abilities (1965, p. 283).
11. Use instructional media and focus on unsolved elements of a field of study (1965, p. 283).

Pulford, Alan

1. Reward creativity (1969, p. 28).

Renzulli, Joseph S.

1. Use the technique of attribute listing (1971, p. 124).
2. Use morphological analysis (1971, p. 124).
3. Use brainstorming techniques (1971, p. 124).
4. Use the technique of forced relationships (1971, p. 124).

Renzulli, Joseph S., Owen, Steven V., & Callahan, Carolyn M.

1. Maintain small groups to encourage creative processes, preferably three or less (1974, p. 108).

Rubin, Louis J.

1. Use inquiry as a teaching technique (1968, p. 76).
2. Emphasize seeking answers to the unknown (1968, p. 84).
3. Use alternative strategies (1968, p. 84).
4. Use techniques which arouse curiosity (1968, p. 75).
5. Develop imagination of students (1968, p. 87).
6. Stimulate a desire to learn about the unknown (1968, p. 88).
7. Know each student individually (1968, p. 89).
8. Be an example of a creative mind (1968, p. 88).

Segal, Sol

1. Encourage, defend, and justify skepticism (1968, p. 234).
2. Allow students to express intellectual aggression and to contradict, question, and analyze their environment (1968, p. 234).

Shallcross, Doris J.

1. Provide brainstorming sessions (1971, p. 87).
2. Use checklisting procedures (1971, p. 87).
3. Use student groups working toward common goals (1971, p. 89).
4. Use problem-solving techniques involving orientation, preparation, analysis, ideation, incubation, synthesis, verification (1971, p. 88).
5. Seek alternative solutions (1973, p. 625).
6. Provide a nonjudgmental climate (1973, p. 626).
7. Provide materials that stress the mind (1973, p. 626).
8. Provide materials which deal with new experiences (1973, p. 626).
9. Provide time for students to demonstrate creativity (1973, p. 626).

Shivley, Joe E., & Feldhusen, John F.

1. Teach participation for nonverbal flexibility (1972, p. 64).
2. Teach participation for originality (1972, p. 65).

Shumsky, Abraham

1. Encourage students to move from the known to the unknown (1965, p. 54).
2. Tolerate ambiguity and disorder (1965, p. 54).
3. Encourage task involvement (1965, p. 54).
4. Permit students to react in individual ways (1965, p. 54).
5. Maintain a democratic atmosphere (1965, p. 77).

6. Provide freedom for students (1965, p. 80).
7. Include students in planning (1965, p. 81).
8. Move toward the unknown (1965, p. 83).
9. De-emphasize evaluation (1965, p. 83).
10. Set up an atmosphere of exploration (1965, p. 258).
11. Emphasize self-initiative (1965, p. 258).

Sigel, Irving E.

1. Encourage curiosity (1965, p. 99).
2. Encourage imagination (1965, p. 99).
3. Reward creative behavior (1965, p. 99).
4. Welcome and encourage enthusiasm (1965, p. 99).
5. Provide a free environment (1965, p. 100).
6. Provide security for students (1965, p. 101).
7. Devise alternative plans (1965, p. 101).
8. Help students develop abilities to distinguish between knowing per se and how to find out what is learned (1965, p. 102).

Smith, James A.

1. Strive for something novel (1973, p. 23).
2. Stress divergent thinking processes (1973, p. 23).
3. Develop flexibility of thinking (1973, p. 23).
4. Develop originality (1973, p. 23).
5. Develop fluency of ideas (1973, p. 23).
6. Develop spontaneity (1973, p. 23).

7. Develop uniqueness (1973, p. 23).
8. Use open-ended situations (1973, p. 24).
9. Allow students to face the unknown alone (1973, p. 23).
10. Allow students to develop their own ideas (1973, p. 25).
11. Stress individuality (1973, p. 25).
12. Reward differences, uniqueness, individuality, and originality (1973, p. 25).
13. Consider the process as important as the product (1973, p. 25).
14. Provide a comfortable classroom (1973, p. 25).
15. Provide a comfortable seating arrangement (1973, p. 25).
16. Establish good rapport (1973, p. 26).
17. Establish a permissive atmosphere (1973, p. 26).
18. Establish feelings of acceptance (1973, p. 26).
19. Make lessons success-oriented (1973, p. 26).
20. Learn and apply problem-solving situations (1973, p. 26).
21. Encourage self-initiated learning (1973, p. 26).
22. Use constructive criticism (1973, p. 26).
23. Use democratic processes (1973, p. 27).
24. Practice deferred judgments (1973, p. 27).
25. Use techniques of creative ideation (1973, p. 27).
26. Use brainstorming techniques (1973, p. 27).
27. Maintain a sense of humor (1973, p. 65).
28. Emphasize multiple answers (1973, p. 104).

29. Provide experimental atmosphere (1973, p. 198).

30. Create a need for certain knowledge (1973, p. 283).

31. Encourage cooperation (1975, p. 130).

32. Help students experience success (1975, p. 131).

33. Encourage students to seek ways to overcome weaknesses (1975, p. 195).

34. Establish an atmosphere that is psychologically secure and all ideas are welcome (1975, p. 248).

35. Encourage "cross-fertilization" of ideas (1975, p. 249).

36. Provide role-playing situations (1975, p. 249).

37. Encourage students to be open to internal and external experiences (1975, p. 284).

38. Encourage students to be open to experiences (1975, p. 249).

39. Encourage students to continue asking questions (1975, p. 285).

40. Provide students freedom to express themselves (1975, p. 285).

41. Provide students freedom to study and make preparations (1975, p. 285).

42. Provide students freedom to pursue problems and unknown areas (1966, p. 221).

43. Tolerate deviation from the traditional (1967, p. 116).

44. Allow students to independently seek their own experiences (1967, p. 116).

Strasses, Ben B.

1. Welcome ideas as valid contributions (1967, p. 207).
2. Probe beyond yes/no answers (1967, p. 207).
3. Seek relationships (1967, p. 208).
4. Respond to questions positively (1967, p. 208).
5. Ask questions, then wait for reflective thinking (1967, p. 208).
6. Ask a variety of questions (1967, p. 208).
7. Encourage students to go beyond the correct answer (1967, p. 208).
8. Ask questions which have no correct answers (1967, p. 208).
9. Include unknowns into the curriculum (1967, p. 206).

Strickland, Melissa

1. Refuse to classify everything in a right or wrong category (1975, p. 154).
2. Provide problem-solving situations (1974, p. 155).

Suchman, J. Richard

1. Provide a responsive environment (1967, p. 92).
2. Use methods permitting students to operate autonomously in their search for understandings (1967, p. 94).
3. Allow students to work out own ideas and discover the best solutions (1967, p. 95).
4. Be less directive and more responsive (1967, p. 96).

Taylor, Calvin W.

1. Provide direct ideas that will arouse creative thought (1968, p. 88).
2. Ask thought-provoking questions about known and unknown subjects so that students may experience contradictions and knowledge of differing degrees of proof (1968, p. 88).
3. Use related technology (1968, p. 89).
4. Develop a creative personality with motivational characteristics (1968, p. 89).
5. Provide take-home thinking problems to students (1967, p. 171).
6. Provide time when students are allowed to think freely (1967, p. 171).
7. Encourage good incubation processes in students (1967, p. 172).
8. Deliberately probe students (1967, p. 172).
9. Allow attention of students to be more diverse and scanning (1967, p. 172).
10. Encourage students to go beyond the usual stopping place to gain deeper understanding of problems and their solutions (1967, p. 172).
11. Provide additional information which challenge conclusions decided upon by students (1967, p. 172).
12. Provide an environment which encourages disorder and some confusion (1967, p. 173).

13. Combine elements which may appear to be unrelated (1967, p. 173).
14. Provide time for free play with ideas (1967, p. 173).
15. Accept ideas from all students and work together (1972, p. 16).
16. Allow students to assist in the adjustment of their environment (1972, p. 16).
17. Maintain flexibility with each student (1972, p. 16).
18. Provide an exciting, responsive classroom environment (1972, p. 20).
19. Allow students to be active participants in dealing with knowledge (1973, p. 102).
20. Instruct for multiple talents (1973, p. 106).
21. Guide students to the fringe of knowledge in order that they might experience knowledge at different stages of development (1965, p. 256).
22. Teach in a manner that students are thought of as thinkers (1965, p. 260).
23. Provide a wide variety of learning and thinking (1965, p. 260).

Taylor, Calvin W., & Harding, Harold F.

1. Allow students to ask many questions (1967, p. 24).
2. Involve all students in planning, communicating, decision-making, organizing, and other talents (1967, p. 24).

Taylor, Irving A.

1. Reduce frustration (1971, p. 196).
2. Eliminate win-lose competition (1971, p. 196).
3. Provide student support (1971, p. 196).
4. Encourage divergence (1971, p. 196).
5. Maintain an open environmental structure (1971, p. 196).
6. Minimize coercion (1971, p. 196).
7. Encourage free communication (1971, p. 196).
8. Allow for risk-taking (1971, p. 196).
9. Provide competent group leadership (1971, p. 196).
10. Provide stimulation of senses (1971, p. 196).
11. Encourage originality (1971, p. 196).
12. Identify students from a Leibnitzean point of view--capable of actualizing their own potentials (1971, p. 197).

Torrance, E. Paul

1. Use incompleteness to encourage learning and achievement (1970, p. 6).
2. Analyze a problem from psychological, sociological, and emotional viewpoints (1970, p. 7)
3. Encourage students to go beyond what is known (1970, p. 7).
4. Search for missing parts (1970, p. 8).
5. Encourage students to search for elegant solutions (1970, p. 8).

6. Respect students' questions (1970, p. 9).
7. Identify and comprehend the creative needs of students (1970, p. 13).
8. Provide educational experiences which fit each student (1970, p. 13).
9. Provide a responsive environment (1970, p. 15).
10. Develop a real knowledge of each student (1970, p. 25).
11. Occasionally challenge students to their limits, even to the point of frustration (1970, p. 29).
12. Provide a variety of challenging assignments to students and note results (1970, p. 29).
13. Continuously alter environmental conditions (1970, p. 29).
14. Encourage teamwork situations (1970, p. 29).
15. Encourage students to read creatively instead of reading critically so that new solutions to problems may be considered (1970, p. 58).
16. Provide opportunities to face ambiguities and uncertainties (1970, p. 67).
17. Utilize analogies to make the familiar strange and the strange familiar (1970, p. 70).
18. Structure assignments only enough to provide clues and guidance (1970, p. 72).
19. Encourage students to take the next step beyond the known (1970, p. 69).

20. Stimulate curiosity among students (1970, p. 69).
21. Provide incomplete data (1970, p. 62).
22. Preserve open-endedness (1970, p. 78).
23. Lead students beyond textbooks (1970, p. 86).
24. Encourage students to note gaps in knowledge (1970, p. 83).
25. Legitimate divergent thinking (1970, p. 86).
26. Relate knowledge from one field to knowledge from another field (1970, p. 89).
27. Encourage students to develop multiple hypotheses (1970, p. 89).
28. Push scientific laws to their limits (1970, p. 90).
29. Examine and face paradoxes (1970, p. 90).
30. Respect unusual questions (1970, p. 117).
31. Encourage quantity of ideas instead of quality (1970, p. 179).
32. Maintain a competitive atmosphere (1966, p. 179).
33. Assess creative behavior as a foundation for individualizing instruction for students (1965, p. 201).
34. Treat learning as a relational process; assist students in identifying their mistakes and finding correct answers while using their own initiative (1965, p. 203).
35. Provide a wide diversity of stimuli (1965, p. 206).
36. Involve more senses of the students (1965, p. 206).
37. Emphasize originality (1965, p. 210).

38. Respect students' questions (1968, p. 6).

39. Encourage self-initiated learning (1968, p. 5).

40. Instruct students to test their ideas (1968, p. 7).

41. Ask more provocative questions (1968, p. 11).

42. Emphasize elaboration by students (1968, p. 11).

43. Refrain from grading students' work until the second half of the course so they will be free to read, think, and experiment (1968, p. 13).

44. Provide time for experimentation and unevaluated practice (1968, p. 13).

45. Heighten expectations and anticipation of students (1968, p. 14).

46. Require students to perform tasks already completed but with new references (1968, p. 22).

47. Allow students to succeed in possible ways for them, and encourage them to strive for higher levels of creative functioning (1967, p. 187) (d).

48. Respect unusual ideas (1967, p. 187) (d).

49. Plan activities which encourage independent thinking and judgment (1967, p. 188) (d).

50. Examine disapproved behavior for signs of creative potential (1967, p. 188) (d).

51. Encourage students to seek the truth (1967, p. 194) (d).

52. Emphasize the importance of courage and honesty (1967, p. 62) (e).

53. Establish an environment of receptive learning (1967, p. 67) (e).

54. Emphasize moral courage and social adjustment (1967, p. 69) (e).

55. Attempt to eliminate all emotional and intellectual inhibitions (1967, p. 165) (c).

56. Stimulate the flow of ideas by providing freedom among students (1967, p. 169) (c).

57. Respect the needs of students to work alone (1967, p. 183) (a).

58. Allow curriculum to differ for different students (1967, p. 183) (a).

59. Permit total involvement of students (1967, p. 183) (a).

60. Maintain flexibility (1967, p. 183) (a).

61. Encourage divergent ideas (1967, p. 186) (a).

62. Permit students to "test their limits" (1967, p. 186).

63. Utilize criticism carefully and sparingly (1967, p. 186) (a).

64. Provide materials which develop imagination (1967, p. 210) (d).

65. Emphasize the recording of ideas (1967, p. 213) (d).

66. Prize true individuality (1967, p. 215) (d).

67. Encourage students to play with words (1967, p. 218) (d).

68. Help students in maintaining assertiveness without being hostile (1967, p. 238) (f).

69. Assist students in understanding the nature of their creative processes (1967, p. 239) (f).

70. Emphasize the handling of objectives and ideas (1967, p. 241) (f).

71. Encourage students to systematically test new hypotheses (1967, p. 241) (f).

72. Avoid forcing set patterns (1967, p. 241) (f).

73. Teach skills for avoiding peer sanctions (1967, p. 241) (f).

74. Create "thorns in the flesh," to be aware of defects, to identify disturbing elements (1967, p. 241) (f).

75. Create a necessity for creative thinking (1967, p. 241) (f).

76. Provide resources needed by students to work out ideas (1967, p. 241) (f).

77. Develop constructive criticism (1967, p. 241) (f).

78. Encourage students to acquire knowledge in a variety of fields (1967, p. 241) (f).

79. Provide a classroom which serves as a laboratory for democracy (1967, p. 326) (b).

80. Teach students skills of historiography (1967, p. 327) (b).

81. Teach students skills of descriptive and experimental research (1967, p. 327) (b).

82. Suspend judgment temporarily (1967, p. 327) (b).

83. Set up criteria for utilization in judging ideas and making decision (1967, p. 330) (b).

84. Encourage students to develop constructive attitudes toward information (1967, p. 330) (b).

Torrance, E. P., & Torrance, Pansy

1. Define problems and gaps in information (1973, p. 7).
2. Produce alternative solutions (1973, p. 7).
3. Test the most promising solutions (1973, p. 7).
4. Measure ideas to determine the most effective ones (1973, p. 12).
5. Consider humor as important (1973, p. 23).
6. Plan exercises that strengthen verbal fluency (1973, p. 23).
7. Plan exercises which strengthen originality (1973, p. 23).
8. Utilize independent studies (1973, p. 37).
9. Experiment with small groups (1973, p. 40).
10. Provide a variety of intrinsic motivations (1973, p. 42).

Treffinger, Donald J., & Gowan, John C.

1. Provide brainstorming activities (1971, p. 128).
2. Use bionics--a technique which attempts discovery in the nature of ideas which are related to the solution of students' problems (1971, p. 128).
3. Develop awareness to what is happening inside students and how they relate to the present (1971, p. 128).

Wade, Serena

1. Accept students as worthy individuals (1968, p. 89).
2. Understand students empathetically (1968, p. 89).

3. Provide psychological freedom (1968, p. 99).

Walker, W. J.

1. Encourage originality (1967, p. 295).
2. Encourage initiating behavior (1967, p. 296).
3. Be less authoritarian (1967, p. 296).
4. Be less stereopathic (1967, p. 299).
5. Be more adaptive (1967, p. 300).
6. Be more outgoing and permissive (1967, p. 300).
7. Encourage invention (1967, p. 300).
8. Provide a free atmosphere (1967, p. 301).

Walkup, Lewis E.

1. Encourage quantity so that quality is the result (1971, p. 92).

Watson, Catherine

1. Give students freedom to work with ideas without fear of grades (1970, p. 3).
2. Provide freedom for students to create, relate, and understand (1970, p. 3).
3. Provide challenging and stimulating experiences (1970, p. 3).
4. Encourage inquiry in a learning atmosphere (1970, p. 4).

Weigand, James

1. Provide freedom to explore (1971, p. x).
2. Accept wrong answers (1971, p. x).
3. Be less concerned with closure (1971, p. xi).
4. Be less concerned with verbalization (1971, p. xi).

Wiesner, Jerome B.

1. Tolerate novel ideas (1972, p. 96).
2. Encourage imaginative thinking (1972, p. 96).
3. Use analogies, similies, and metaphors (1972, p. 96).
4. Help students develop their own style of learning (1972, p. 97).
5. Maintain a skeptical point of view (1972, p. 96).

Wight, Albert R.

1. Use behavioral objectives in education--one that is competency-based (1971, p. 57).
2. Allow students to participate in defining objectives (1971, p. 57).
3. Allow students to assist in decisions concerning performance criteria (1971, p. 57).
4. Involve students in measuring and evaluating performance against established criteria (1971, p. 57).
5. Reward creativity (1969, p. 76).
6. Allow flexibility (1969, p. 76).
7. Attend professional meetings and lectures (1969, p. 78).
8. Demonstrate a supportive attitude (1969, p. 78).
9. Welcome any questions (1969, p. 78).
10. Give open-book tests (1969, p. 78).
11. Include incomplete questions on tests (1969, p. 60).
12. Be open to new experiences (1969, p. 75).

Williams, Frank E.

1. Use instructional media to stress various approaches to problem-solving (1966, p. 367).
2. Use instructional media to develop independence-of-thought activities (1966, p. 367).
3. Reward and encourage autonomy (1966, p. 367).
4. Use delayed feedback techniques (1966, p. 368).
5. Use instructional media to provide modes of questioning (1966, p. 367).
6. Encourage the resistance to prematurely making decisions (1967, p. 279) (a).
7. Train students in fluency (1967, p. 279) (a).
8. Train students in originality (1967, p. 279) (a).
9. Train students in flexibility (1967, p. 279) (a).
10. Include productive thinking operations of the intellect (1967, p. 279) (a).
11. Strengthen students' spontaneity (1971, p. 42).
12. Strengthen students' sensitivity (1971, p. 42).
13. Emphasize alertness (1971, p. 42).
14. Strengthen students' imagination (1971, p. 42).
15. Strengthen students' curiosity (1971, p. 42).
16. Allow students to experiment in estimating and predicting (1971, p. 43).
17. Allow students to experiment in measuring (1971, p. 43).
18. Encourage students to seek viewpoints of others (1971, p. 43).

19. Free the climate of excessive competition (1971, p. 44).
20. Free the climate of excessive anxiety (1971, p. 44).
21. Value students' questions and ideas (1971, p. 44).
22. Respect creativity wherever it is found (1971, p. 44).
23. Express love and respect in the classroom (1973, p. 44).
24. Provide an atmosphere of freedom (1973, p. 197).
25. Tolerate new ideas and usual patterns of action (1973, p. 198).
26. Develop fluidity of associations (1967, p. 179) (b).
27. Prove new dimensions of learning (1967, p. 179) (b).
28. Provide freedom to experiment (1967, p. 179) (b).
29. Provide a democratic classroom (1967, p. 199) (b).

Willoughby, Stephen S.

1. Encourage independence (1968, p. 119).
2. Have a good background in subjects taught (1968, p. 120).
3. Use discovery techniques between highly-structured approach of Socrates and the laissez-faire approach (1968, p. 123).

Wilson, John A. R., & Robeck, Mildred C.

1. Develop independence (1968, p. 56).
2. Consider all students as worthy individuals (1968, p. 57).
3. Encourage spontaniety and imagination (1968, p. 57).
4. Individualize instruction (1968, p. 63).
5. Encourage ingenuity and initiative (1968, p. 57).
6. Reinforce expressed uniqueness (1968, p. 65).
7. Maintain freedom within the curriculum (1968, p. 67).

8. De-emphasize conformity (1968, p. 67).
9. Provide a free time or choice period (1968, p. 68).
10. Provide a variety of materials (1968, p. 72).
11. Reward honest and responsible responses (1968, p. 72).
12. Teach students to identify areas of conformity and adhere to convention (1968, p. 73).

Woodfin, Mary Jo

1. Interrelate content, process, and product (1968, p. 198).
2. Recognize values of varying answers (1968, p. 198).
3. Provide alternatives in activities (1968, p. 199).
4. Encourage creative producers and consumers (1968, p. 199).
5. Encourage students to help themselves (1968, p. 199).
6. Involve students in evaluation procedures (1968, p. 200).
7. Provide time for individual study projects (1968, p. 200).
8. Use group procedures (1968, p. 201).
9. Encourage self-initiated projects (1968, p. 278) (b).
10. Provide time for independent thinking (1968, p. 278) (b).
11. Use methods which encourage students to project themselves into the problem (1968, p. 278) (b).
12. Provide group activities (1968, p. 278) (b).
13. Plan short-term activities (1968, p. 278) (b).
14. Plan long-term activities (1968, p. 278) (b).
15. Encourage self-evaluation (1968, p. 278) (b).
16. Give problems to students for which no answers can be provided (1968, p. 279) (b).

PART II

Practices Identified By Three Authors

The recommended practices for enhancing creativity in the classroom were examined by the researcher to identify only those practices recommended by three different authors. These practices were compiled, edited, and placed in opinionnaire form to be reacted upon by a selected panel of experts. The 39 recommended practices with statements justifying their inclusion in the opinionnaire are the following:

1. Establish an atmosphere in which the teacher and the students are free from conformity.
   a. De-emphasize conformity (Wilson & Robeck, 1968, p. 68).
   b. Provide freedom for teachers and students from conformity (Parnes, 1967, p. 41).
   c. Remove pressures to conform (Hallman, 1967, p. 325).
2. Establish a psychologically secure, non-threatening and supportive atmosphere where criticism is seldom used and risks can be taken without fear of penalties; eliminate competition for grades.
   a. Make provision for student support (I. Taylor, 1971, p. 196).
   b. Express respect for students (DeRoche, 1972, p. 134).

c. Students should not feel threatened (J. Smith, 1975, p. 132).

d. Rule out criticism (Stein, 1975, p. 29).

e. Refrain from criticism (Hophan and Peters, 1968, p. 289).

f. Allow students the privilege of speaking their minds without fear of punishment (Massialas, 1967, p. 194).

g. Allow for and expose students to risk-taking (I. Taylor, 1971, p. 196).

h. Allow students to err without recriminations (Boos, 1971, p. 278).

3. Maintain an atmosphere which is competitive.

a. Encourage group members to challenge each other (Stein, 1975, p. 14).

b. Provide a competitive atmosphere (Torrance, 1966, p. 179).

c. Capitalize on competition (Massialas, 1967, p. 22).

4. Maintain an appropriate balance between freedom and control.

a. Teach discipline and self-control, but use flexibility (Ashner and Bish, 1965, p. 193).

b. Maintain a balance between control and freedom (DeBono, 1971, p. 202).

c. Find an appropriate balance for students between sufficient latitude and sufficient structure (Michael, 1968, p. 53).

d. Achieve balance between freedom and control (Groch, 1969, p. 312).

5. Arrange the classroom comfortably so that students are encouraged to be more active participants.
   a. Arrange chairs in semi-circle (Parnes, 1967, p. 36).
   b. Provide a comfortable classroom (J. Smith, 1973, p. 25).
   c. Physical arrangement maximizes opportunities for students to see, hear, and participate (Clark and Ramsey, 1973, p. 69).
6. Allow the students to refuse to accept the known as their goal and encourage them to reach beyond toward the unknown.
   a. Provide an atmosphere allowing students the opportunity to refuse the tested as their goal and to see beyond them (Gleason, 1968, p. 13).
   b. Emphasize transfer of training by learning to retreat from facts in order to see them in larger perspective (MacKinnon, 1968, p. 159).
   c. Make students aware of problems, difficulties, and gaps in knowledge (Torrance, 1970, p. 83).
   d. Formulate thought-provoking questions about known and unknown subject matter to give students the experience in dealing with contradictions (C. Taylor, 1968, p. 88).
   e. Require students to seek answers to the unknown (Rubin, 1968, p. 84).
7. Gain self-confidence and improve skills by solving problems of progressively greater complexity.

a. Tackle and solve problems of progressively greater complexity (Edwards, 1968, p. 34).

b. Gain self-confidence and skills by actually solving problems of progressively greater difficulty (Stein, 1975, p. 249).

c. Move from the easy to the difficult (Massialas, 1967, p. 16).

8. Encourage students to be open to new experience and a great diversity of stimuli.

   a. Instill in students open-mindedness (Crutchfield, 1967, p. 201).

   b. Be open to new experiences (Moustakas, 1967, p. 179).

   c. Involve a greater diversity of stimuli (Torrance, 1965, p. 206).

   d. Maintain an environment which is open (R. Smith, 1973, p. 165).

   e. Challenge students to be open to experience and stimuli of great variety (Edwards, 1968, p. 34).

9. Assist students in developing a particular style which fits their personality by individualizing instruction.

   a. Tailor-make educational experiences for each pupil (Torrance, 1970, p. 14).

   b. Personalize instruction (Heist and Wilson, 1968, p. 194).

   c. Help the maturing students develop a personal style suited to his personality and abilities (Weisner, 1972, p. 97).

d. Individualize instruction (Crutchfield, 1967, p. 196).

10. Bring students to the knowledge of self-actualization by assisting them in identifying their own strengths and limitations.
    a. Bring students to a knowledge of their own personhood (Kneller, 1965, p. 89).
    b. Assist students in identifying their own strengths and limitations (Newland & Thurstone, 1965, p. 83).
    c. Help each student develop thinking skills so they can move more readily toward self-actualization (Derews & McGuire, 1965, p. 176).
    d. Provide self-discovery activities (Michael, 1968, p. 48).
    e. Enhance self-actualization, based on positive self-concepts (DeRoche, 1972, p. 134).
11. Plan course work in a fashion which encourages the growth of a wholesome skepticism and curiosity.
    a. Encourage, defend, and justify skepticism (Segal, 1968, p. 234).
    b. Design course work in a manner which provides the growth of a wholesome skepticism (Heist & Wilson, 1968, p. 198).
    c. Develop scholarly attitude characteristics of curiosity and skepticism (Michael, 1968, p. 49).

d. Excite students' curiosity (Groch, 1969, p. 309).

e. Encourage curiosity (Hoskin & Swick, 1973, p. 544).

12. Serve as a model which the students can challenge or imitate and improve upon.

a. Offer students a model with which they can identify MacKinnon, 1965, p. 170).

b. Use excellent teachers as exemplars (Derews & McGuire, 1965, p. 176).

c. Provide a model for the way in which creative students can explore (Mead, 1967, p. 168).

d. Provide an example of a creative mind (Rubin, 1968, p. 88).

e. Serve as a model to be emulated and surpassed (Groch, 1969, p. 309).

13. Understand students empathetically and motivate them through listening and real presence of mind.

a. Understand students' characteristics and general motivation (Heist and Wilson, 1968, p. 198).

b. Develop awareness to what is going on within students and how they relate to the present (Treffinger & Gowan, 1971, p. 128).

c. Provide appropriate motivation (Guilford, 1968, p. 94).

d. Motivate students to be creative (R. Smith, 1973, p. 165).

14. Demonstrate a sense of love and respect for all students.
    a. Accept students as worthy individuals (Wade, 1968, p. 99).
    b. Maintain a climate where all students are worthy (Wilson and Robeck, 1968, p. 57).
    c. Accept and value each student as being creative (Hausman, 1968, p. 223).
    d. Illuminate the classroom by a sense of love and respect (Hallman, 1967, p. 328).
15. Tolerate ambiguity, disorder, and paradoxes.
    a. Encourage ambiguity (DeBono, 1971, p. 164).
    b. Maintain tolerance for ambiguity and disorder inherent in the creative process (Shumsky, 1965, p. 57).
    c. Teach by paradoxes (Goodale, 1970, p. 96).
16. De-emphasize the concern for verbalization.
    a. Plan non-verbal activities to help students become more aware of themselves in their environment (Noller, 1971, p. 262).
    b. Teach students to learn to value non-verbal learning (Derews & McGuire, 1965, p. 176).
    c. Have less concern for verbalization (Weigand, 1971, p. xi).
17. Encourage and welcome original and unheralded questions, ideas, and responses.
    a. Welcome and respect unusual questions (Torrance, 1970, p. 117).

b. Welcome and encourage original and unexpected responses (Gleason, 1968, p. 11).

c. Tolerate novel ideas and unconventional points of view (Williams, 1973, p. 198).

d. Encourage students to have original ideas (Kneller, 1965, p. 78).

e. Encourage originality and invention (Walker, 1967, p. 295).

18. Provide opportunities for students to get involved intellectually and emotionally by working out their own interests and self-initiated projects.

a. Allow learning to come from students' interests (Brunswick, 1971, p. 200).

b. Cherish self-initiated sustained learning (Kneller, 1965, p. 85).

c. Encourage independence in thinking (Hoskin and Swick, 1973, p. 544).

d. Encourage independence (Willoughby, 1968, p. 119).

e. Encourage students to take the initiative in discovering and explaining things for themselves (Guilford, 1968, p. 38).

19. Stress the transferring of training by experiencing various sensory and inventive methods.

a. Provide sensory stimulation (I. Taylor, 1971, p. 196).

b. Provide sensory stimulation activities (Noller, 1971, p. 263).

c. Involve a larger number of senses (Torrance, 1965, p. 206).

20. Provide students opportunities to practice such techniques as attribute listing, checklist procedures, and synectics.

a. Emphasize transfer of training by stressing thinking in terms of analogies, similies, and metaphors (MacKinnon, 1968, p. 159).

b. Use analogies to make familiar strange and the strange familiar (Torrance, 1970, p. 70).

c. Use synectics--metaphors and analogies within a systematic framework to achieve creative results (Stein, 1975, p. 172).

d. Use analogies to generate new ideas (DeBono, 1971, p. 105).

e. Provide opportunities for students to practice attribute listing, synectics, and morphological analysis (Edwards, 1967, p. 34).

f. Provide attribute-listing activities which place emphasis upon classes, an important part of encoding information in the memory store (Guilford, 1968, p. 44).

21. Involve students in such tasks as planning, organizing, communicating, decision-making, evaluating, and other known skills.

a. Actively involve students in the total process of defining objectives (Wight, 1971, p. 57).

b. Involve both faculty and students in evaluation procedures (Harris, 1971, p. 63).

c. Allow students to participate in planning (Shumsky, 1965, p. 81).

d. Allow students to share in planning (Burdin & McAulay, 1971, p. 265).

22. Maintain sufficient flexibility in methods, materials, content, and grouping.

a. Provide flexibility (Heist and Wilson, 1968, p. 199).

b. Provide flexibility to adapt to processes and conditions that maximize probability of group effectiveness (Stein, 1975, p. 221).

c. Non-rigidity should be maintained (Parnes, 1971, p. 27).

d. Maintain flexibility in content, methods, and materials (Brunswick, 1971, p. 200).

e. Provide flexibility in ways of conceptualizing the subject matter (McKeachie, 1976, p. 157).

23. Provide an experimental or laboratory situation often.

a. Provide a laboratory situation (Heist and Wilson, 1968, p. 202).

b. Have a time for experimentation (Torrance, 1968, p. 13).

c. Provide an experimental atmosphere (J. Smith, 1973, p. 198).

24. Provide problem-solving situations by applying problem-solving principles--developing various hypotheses and searching for alternative methods.
    a. Provide problem-solving situations (LaBelle, 1974, p. 58).
    b. Provide creative problem-solving situations (Chickering, 1971, p. 49)
    c. Emphasize problem-solving activities (Hewett, 1970, p. 8).
    d. Expand students' capacity to cope with phenomena in alternative ways (Rubin, 1968, p. 84).
    e. Provide more alternatives (McKeachie, 1969, p. 203).
25. Organize small group practice sessions so that students may work together to intensify judgments and produce many ideas.
    a. Keep groups small to encourage creative process of its members (Renzulli, 1974, p. 108).
    b. Provide teamwork situations (Torrance, 1970, p. 29).
    c. Provide a group environment (Stein, 1975, p. 7).
    d. Organize small groups in many sessions in order to provide practice in team and group collaboration for the production of ideas (Parnes, 1966, p. 313).
    e. Use small groups to discuss questions (Guilford, 1968, p. 39).

26. Provide opportunities for students to practice deferred judgment.
    a. Teach students to first produce ideas and to judge afterwards (Parnes, 1966, p. 312).
    b. Provide opportunities for pupils to practice deferred judgment as individuals and groups (Edwards, 1967, p. 34).
    c. Design instructional media around the use of deferred judgment (Williams, 1968, p. 367).
    d. Defer judgments (Hallman, 1968, p. 328).
27. Occasionally challenge students to the edge of frustration so that students may utilize all of their talents.
    a. Work just this side of frustration where every bit of the student's ability is required (Ashner and Bish, 1965, p. 191).
    b. Assist students in coping with frustration and failure (Hallman, 1967, p. 330).
    c. Use frustration as a pathway to problem-solving (Burdin & McAulay, 1971, p. 266).
28. Challenge students by providing various meaningful assignments and observe the outcomes.
    a. Plan and develop exciting, meaningful and worthwhile assignments, special projects, and examinations (Michael, 1968, p. 252).

b. Develop and give to students some take-home thinking problems (C. Taylor & Harding, 1967, p. 171).

c. Challenge pupils with a variety of types of assignments and note the results (Torrance, 1970, p. 29).

d. Require of all students the solutions of some problem--research project, term paper, etc. MacKinnon, 1967, p. 235).

29. Involve students in activities consisting of incomplete data for determining solutions.

a. Use incompleteness to motivate learning and achievement (Torrance, 1970, p. 6).

b. Maintain open-endedness (DeBono, 1971, p. 184).

c. Use open-ended questions (Woodfin, 1968, p. 278).

30. Encourage "Cross-fertilization" by relating knowledge from one field to knowledge from another.

a. Relate knowledge from one field to knowledge from another (Torrance, 1970, p. 89).

b. Encourage "cross-fertilization" of ideas (Stein, 1975, p. 249).

c. Use "cross-fertilization"--listening to or talking with people in a field different from students (DeBono, 1971, p. 102).

31. Design and utilize exercises which strengthen verbal fluency.

a. Design exercises to strengthen verbal fluency (Torrance, 1973, p. 23).

b. Deliberately teach verbal interactions (Derews & McGuire, 1965, p. 176).

c. Provide activities to emphasize feminine or verbal interests (Gowan, et al, 1967, p. 221).

32. Reward students appropriately and eagerly for any behavior which demonstrates inventiveness, honesty, and responsibility.

a. Readily and appropriately reward creative behavior (Segal, 1968, p. 234).

b. Provide an appropriate set of incentives and motivational devices that reward creative endeavor (Michael, 1968, p. 48).

c. Legitimize and reward creative thinking (Massialas, 1967, p. 97).

33. Provide brainstorming activities which allow free-wheeling of the imagination and encourage quantity to breed quality.

a. Provide brainstorming activities (Stein, 1975, p. 26).

b. Encourage quantity so that quality is the result (Walkup, 1971, p. 92).

c. Provide brainstorming activities (Treffinger, 1971, p. 128).

d. Encourage development of a maximum number of ideas and prevent premature death of potentially good ideas; encourage quantity of ideas (Clawson, 1970, p. 88).

e. Provide brainstorming activities (DeBono, 1971, p. 115).

34. Continuously question and trouble students' minds by using such techniques as redirecting original questions and developing provocative situations.

a. Constantly probe and unsettle pupils' minds (Kneller, 1965, p. 84).

b. Prod students by redirecting their original questions (Massialas, 1967, p. 97).

c. Use chance or provocative methods in order to introduce discontinuity (DeBono, 1971, p. 51).

d. Develop provocative situations about traditional actions or trends (DeVito, 1971, p. 230).

35. Coordinate learning rather than dispensing knowledge.

a. Use the tutorial system instead of the lecture (Kneller, 1965, p. 76).

b. Decrease teacher talk (Mohan, 1973, p. 182).

c. Make teacher's role less directive and more responsive (Suchman, 1967, p. 96).

d. Teacher's role is nondirective and should no longer be the undisputed authority on all important matters (Massialas, 1967, p. 25).

36. Incorporate different techniques which will allow the students to perform autonomously as they search for new understanding.
    a. Reward and encourage autonomy in the classroom (Williams, 1968, p. 367).
    b. Grant more autonomy (MacKinnon, 1965, p. 164).
    c. Use methods which permit pupils to operate autonomously in their search for new understanding (Suchman, 1967, p. 94).
37. Give tests which contain simple completion items to encourage some transfer recall.
    a. Give tests of short completion questions which require students to transfer recall (Guilford, 1968, p. 39).
    b. Use tests with simple completion items in which students are granted conceivable freedom in their generation of relatively novel and imaginative answers (Michael, 1968, p. 256).
    c. Give incomplete questions on tests (Hughes, 1969, p. 79).
38. Relate the inventions of one individual to the accomplishments of others.
    a. Consciously relate the inventions of one person to what others are accomplishing (Michael, 1968, p. 53).

b. Relate the inventions of one person to what others are doing (Hausman, 1968, p. 223).

c. Show students how others contemplate reorganization or invent the future (Derews & McGuire, 1965, p. 177).

39. Provide each student with the opportunity to participate in a leadership role.

a. Develop the concept of shared leadership (Clark & Ramsey, 1973, p. 69).

b. Share power (Wight, 1971, p. 57).

c. Provide students with the opportunity to serve as leaders of small groups on various aspects of their own problems, as well as in other assigned practice problems (Parnes, 1966, p. 319).

d. Rotate the leadership role to motivate participation more fully (Stein, 1975, p. 194).

PART III

A Discussion of the Lists of Recommended Practices for Enhancing Creativity In Any Classroom and in a College of Education Classroom

Approximately 1000 practices for enhancing creativity in any classroom were identified by the researcher through a review of over 100 books, approximately 30 dissertation abstracts, and more than 200 professional periodicals published since 1965. From this review, much repetition was observed by the researcher in the practices identified.

Some practices were identified by the researcher over 15 times in the review of the literature. These recommended practices for enhancing creativity in any classroom include the following:

1. Establish an atmosphere in which conformity is de-emphasized.
2. Establish a non-threatening atmosphere where criticism is seldom used and intellectual risks may be taken without fear of penalties.
3. Encourage and welcome original ideas and questions.
4. Encourage students to be open to new experiences and a great diversity of stimuli.
5. Allow students to get involved intellectually by working out their own interests and self-initiated projects.

6. Practice such methods as attribute listing, checklists, and synectics.
7. Allow students to participate in planning, organizing, and evaluating.
8. Maintain sufficient flexibility in the classroom.
9. Provide problem-solving situations.
10. Organize small groups to more effective teaching.
11. Plan brainstorming activities which encourage free-wheeling of the imagination.

Some practices were only found the minimum of three times by three authors. These included the following:

1. Maintain a competitive atmosphere.
2. Arrange the room comfortably so that participation of all students is encouraged.
3. Tackle and solve problems of progressively greater difficulty.
4. De-emphasize the concern for verbalization.
5. Provide an experimental or laboratory atmosphere.
6. Challenge students to the edge of frustration so that all of the talents of students are used.
7. Provide activities which strengthen verbal fluency.
8. Give tests of short completion questions.
9. Relate the inventions of one person to the accomplishments of others.

The remaining 19 recommended practices were identified by the researcher more than three times in the review of the literature. Most practices included in the opinionnaire submitted to the experts were suggested by seven to twelve different authors.

Four conflicts in recommended practices for enhancing creativity in any classroom were identified by the researcher. Three of these practices were identified by more than three authors and were submitted to the panel of experts. The fourth recommended practice listed below did not meet the established criteria.

1. Emphasize activities which strengthen verbal fluency.
2. De-emphasize verbal fluency.
3. Provide many opportunities for small-group participation.
4. De-emphasize the use of group participation.

The researcher believed that some of the excluded practices may enhance creativity in a college of education classroom; however, they did not meet the established criteria. Recommended practices which the researcher would liked to have included in the opinionnaire submitted to the panel of experts are:

1. When possible, involve students in some aspects of the instructor's own research to involve them in the excitement of research.

   This practice might encourage many capable students to continue their studies beyond the undergraduate or master's level. Working with real scientific problems might enhance creative thinking in the more able students.

2. De-emphasize the reliance on textbooks.

Although many professors do rely on other materials and methods, inclusion of this practice would be meaningful for those who prefer to teach a specific text. Cross-fertilization of information can best be performed when the barriers are removed.

3. Free oneself from publishing and college committees enough to spend more time with students.

The researcher believed that publishing and college committees are important aspects of a professor's career; however, such activities should not deprive the students of their opportunities to communicate with the professors. Professors can best understand students when time for interaction beyond the classroom is provided.

4. Ask questions, then wait for reflective thinking.

The habit of reflective thinking is an advantageous asset of a creative student according to the beliefs of the researcher. If such a habit is to be developed, professors need to encourage reflective thinking in their classrooms.

5. Consider humor as an important factor.

The researcher believed that when students and professors are relaxed and an atmosphere of freedom, including humor, is present, creative thinking may be evidenced more readily. Pressures from a threatening environment inhibit creativity in many students.

CHAPTER IV

Identification, Selection, and Responses Of The Panel Of Experts

To validate the content of the list of recommended practices for enhancing creativity in the college of education classroom, a panel of nine experts were selected by the researcher. To be considered an expert in the field of creativity, each candidate was to be the author or editor of a minimum of three books, articles, and/or reports directly related to creativity. Included in this chapter is a brief resume of each member of the panel followed by an analysis of their responses to the recommended practices for enhancing creativity in the college of education classroom.

PART I

The Selected Panel of Experts

Dr. J. Paul Guilford, professor of psychology, emeritus, at the University of Southern California, has done much research in the area of intelligence and creativity. He is the author of many books including the following: The Nature of Human Intelligence; Creativity: Testing for Creativity; and Fundamental Statistics in Psychology and Education. Among his articles that have been published are "Creativity" and "The Three Faces of Intellect" in The American Psychologist; and

"Creativity: Reprospect and Prospect" in The Journal of Creative Behavior. Dr. Guilford holds an undergraduate and master's degrees from the University of Nebraska and a Ph.D. from Cornell University. He was formerly an instructor of psychology at the University of Illinois, assistant professor of psychology at the University of Kansas, and associate professor at the University of Nebraska. Dr. Guilford is well known for his model of the intellect.

Dr. Paul Heist has done much research in the area of personality theories and development among students in colleges and universities. He has published such books as The Creative College Student and Educating for Creativity--A Modern Myth?, and articles including "Personality and Scholarship" in Science and "Higher Education and Human Potentialities" in C. C. Thomas' Explorations in Human Potentialities. Dr. Heist holds an undergraduate degree from Luther College, an M. A. from the University of Illinois, and an M. Ed. and Ph.D. from the University of Minnesota. Among his past experiences, he has held the following positions: instructor of educational psychology at Carthage College; counselor of personnel, University of Minnesota; assistant professor and associate professor of psychology and director of the counseling center at Oregon State University; and associate research psychologist at the Center for the Study of Higher Education and research psychologist at the Center of Research and Development of Higher Education, University of California at Berkeley. Dr. Heist is presently professor of higher education and research psychologist and director of the Center of Research for Undergraduate Studies, University of California at Berkeley.

Dr. Donald W. MacKinnon has been extensively involved in personality assessment, personality theory, and the psychology of human motivation emphasizing unconscious factors. He is presently professor of psychology and director of the Institute of Personality Assessment and Research at the University of California at Berkeley. He holds an A.B from Bowdoin College and an M.A and Ph.D. from Harvard University. Formerly, he has served in the following positions: instructor in psychology at the University of Maine and Harvard University; assistant professor, Bryn Mawr College; and director, Station S., Office of Strategic Services. Some of Dr. MacKinnon's publications include Assessment of Men, Experimental Studies in Psychodynamics, "Fact and Fantasy in Personality Research," "The Nature and Nurture of Creative Talent," "Personality and the Realization of Creative Potential" in American Psychologist. His research studies in the field of creativity within as well as outside the field of education makes Dr. MacKinnon a most valuable member of the panel of experts.

Dr. William B. Michael, a graduate of Los Angeles and the University of Southern California, is professor of psychology and education at the University of Southern California. He has held various positions including: assistant professor, Princeton University; associate professor, San Jose State University; associate professor and professor of psychology and education at the University of Southern California; research associate for Rand Corporation; and

chairman of the Department of Educational Psychology at the University of Southern California. Dr. Michael has been involved in research studies concerning factor analysis in aptitude testings, applications of analysis of variance to problems of experimental design in psychology, and applications of statistical methods to test construction and evaluation. Some of his publications which qualify him as an expert in creativity include: Teaching for Creative Endeavor, Psychological Foundations of Learning and Teaching and Handbook of Research and Evaluation.

Dr. Sidney J. Parnes, professor of Creative Studies at State University New York College at Buffalo, has written extensively in the area of creativity. Included in his publications are: Creative Behavior Guidebook and Creative Behavior Workbook; Creativity: Unlocking Human Potential; A Sourcebook for Creative Thinking; and Toward Supersanity: Channeled Freedom. He has previously served as field supervisor of distributive education at the University of Pittsburgh and director of creative education at State University New York College at Buffalo. Presently, he serves as director of the Creative Problem-Solving Institute New York College, Buffalo, and president of the Creative Education Foundation. Dr. Parnes has constructed useful materials for those interested in assessing creativity in students.

Dr. James A. Smith, a graduate from Albany State and Syracuse University, holds high credentials which qualify him as an

expert in the field of creativity. Dr. Smith has stated that many of his publications have focused upon the elementary school, but as a professor of education, many of his suggestions for enhancing creativity have proved beneficial for him in his classes. His publications include: Creativity: Its Nature and Nurture; Setting Conditions for Creative Teaching in the Elementary School; Creative Teaching of Creative Arts in the Elementary School; and four additional "Creative Teaching" books covering language arts, social studies, reading and literature, and mathematics. Dr. Smith recently retired as a professor of education at State University of New York College in Oswego. Other positions in which he has served include: president of the Board of Directors for the New York State Council for Children; director of teacher preparation in early childhood and elementary education; director of demonstration school; a demonstration teacher at Syracuse University and State University of New York College at Oneonta; teaching principal; and public school teacher.

Dr. Morris I. Stein, a graduate of City College New York and Harvard University, now serves as professor of psychology in the graduate school, New York University. He has previously served in the following positions: an assistant in psychology at the education clinic, City College, New York; intern, Rockland State Hospital, Letchworth Village and State Boys School, New York; assistant, psychology clinic, Harvard; research associate Community Psychaocoust Laboratory; staff psychologist, Veteran Administration

and Boston Mental Hygiene Clinic; research associate and assistant professor of psychology, Chicago; assistant professor and associate professor; and director of the Research Center, Human Relations, New York University. Among Dr. Stein's publications are: The Thematic Apperception Test; Methods in Personality Assessment; and Creativity and the Individual.

Dr. Calvin W. Taylor, professor of psychology at the University of Utah, has been involved in various types of research studies including the following areas: mental abilities, especially creative and communicative personality factors; the theory of psychological measurements, contributing and working conditions of scientists, physicians, and nurses; and teaching for multiple talents in classrooms. His professional experiences include such positions as junior occupational analyst and assistant statistician in the Occupational Analysis Division of the United States Federal Agency, Washington, D. C. He has also served as an instructor in psychology at the University of Utah. Dr. Taylor is the author of Architectural Psychology, Climate for Creativity, and Exploratory Research on Communications Abilities and Creative Abilities. His article, "Cultivating New Talents: A Way to Reach the Educationally Deprived" appeared in The Journal of Creative Behavior.

Dr. E. Paul Torrance, a graduate of Mercer University, University of Minnesota, and University of Michigan, has accomplished much in the field of creativity. His research involves studies in

measurement and development of creative thinking abilities, teaching children to think creatively, and group dynamic influences on creative behavior. Some of his publications are: Guiding Creative Talent; Education and the Creative Potential: Rewarding Creative Behavior; Encouraging Creativity in the Classroom, plus approximately 500 others. Well known for his tests of creativity, he received an award for his outstanding work on creativity by the National Association of Gifted Children in 1967. Dr. Torrance is presently chairman of the Department of Educational Psychology at the University of Georgia.

PART II

Analysis of Responses of the Panel of Experts to the Recommended Practices for Enhancing Creativity

After the 39 recommended practices for enhancing creativity in the classroom were placed in opinionnaire format, the list, along with a letter of explanation, was mailed to each of the nine selected experts (Appendix A). The panel of experts was requested to react to the 39 recommended practices as to their degree of appropriateness, inappropriateness, or appropriateness with modifications for use in a college of education classroom.

Responses to the list of recommended practices were obtained from all of the nine experts. Lists were compiled by the researcher to identify those recommended practices agreed upon by more than two-thirds as appropriate for a college of education classroom. Experts were requested to respond to the applicability of each recommended practice in a college of education classroom by utilizing the Likert Scale (strongly agree, agree, undecided, disagree, and strongly disagree). These results were reported in Table 1. Column B indicates the percentage of the panel which agreed (strongly agreed and agreed) with each recommended practice.

Of the 39 recommended practices to which experts responded to their applicability in a college of education classroom, one practice was strongly agreed upon by 100% of the experts. This practice stated

TABLE I

Summary of Responses of Panel of Nine Experts

A	B	C	D	E	F	G
Recommended Practice Number	Percent of Panel of Experts Agreeing	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1	78	5	2	0	1	1
2	78	3	4	2	0	1
3	* 22	0	2	3	4	0
4	89	4	4	0	1	0
5	89	5	3	0	1	0
6	100	7	2	0	0	0
7	100	5	4	0	0	0
8	100	7	2	0	0	0
9	89	6	2	0	0	1
10	* 67	3	3	1	1	1
11	* 67	3	3	2	1	0
12	* 67	6	0	1	2	0
13	* 67	5	1	3	0	0
14	100	8	1	0	0	0
15	100	5	4	0	0	0
16	* 56	1	4	1	3	0
17	100	8	1	0	0	0
18	100	9	0	0	0	0
19	89	8	0	1	0	0

* - Deleted as an inappropriate practice for enhancing creativity in a college of education classroom.

TABLE I

Summary of Responses of Panel of Nine Experts

A	B	C	D	E	F	G
Recommended Practice Number	Percent of Panel of Experts Agreeing	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
20	89	6	2	0	1	0
21	89	6	2	0	1	0
22	100	5	4	0	0	0
23	78	3	4	2	0	0
24	100	4	5	0	0	0
25	89	3	5	1	0	0
26	89	6	2	1	0	0
27	78	4	3	2	0	0
28	100	5	4	0	0	0
29	89	5	3	1	0	0
30	100	6	3	0	0	0
31	78	7	0	1	1	0
32	89	7	1	0	1	0
33	89	5	2	1	1	0
34	89	5	3	0	0	1
35	* 67	3	3	1	1	1
36	100	8	1	0	0	0
37	* 44	1	3	2	2	1
38	* 44	1	3	4	0	1
39	78	3	4	1	1	0

* - Deleted as an inappropriate practice for enhancing creativity in a college of education classroom.

that professors should provide opportunities for students to get involved intellectually and emotionally by working out their own interests and self-initiated projects.

Four of the recommended practices were strongly agreed upon for their applicability in a college of education classroom by 89% of the experts. The remaining 11% agreed to their applicability.

1. Demonstrate a sense of love and respect for all students.
2. Encourage and welcome original and unheralded questions, ideas, and responses.
3. Stress the transferring of training by experiencing various sensory and inventive methods.
4. Incorporate different techniques which will allow the students to perform autonomously as they search for new understanding.

Two recommended practices were strongly agreed upon as appropriate in a college of education classroom by seven experts. Two of the experts agreed to their applicability, thereby indicating 100% agreement to the practices.

1. Allow the students to refuse to accept the known as their goal and encourage them to reach beyond toward the unknown.
2. Encourage students to be open to new experiences and a great diversity of stimuli.

Sixty-seven percent of the experts strongly agreed to one recommended practice while the remaining 33% agreed to its applicability.

Experts believed that professors should encourage "cross-fertilization" by relating knowledge from one field to knowledge from another.

Four recommended practices were strongly agreed upon by 56% of the experts. The remaining 44% agreed to the applicability of these practices in a college of education classroom.

1. Gain self-confidence and improve skills by solving problems of progressively greater difficulty.
2. Tolerate ambiguity, disorder and paradoxes.
3. Maintain sufficient flexibility in methods, materials, content, and grouping.
4. Challenge students by providing various and meaningful assignments and observe the outcomes.

One recommended practice received 100% agreement by the panel of experts. Four experts strongly agreed to the appropriateness of the practice in a college of education classroom while five experts agreed with the practice: Provide problem-solving situations by applying problem-solving principles--developing various hypotheses and searching for alternative methods.

Opinions of the experts were quite dispersed on some of the recommended practices. Although 78% agreed to the applicability of the following practices in a college of education classroom, 22% disagreed to their applicability:

1. Establish an atmosphere in which the teacher and the students are free from conformity.

2. Establish a psychologically secure, non-threatening, and supportive atmosphere where criticism is seldom used and risks can be taken without fear of penalties; eliminate competition for grades.

Although two recommended practices were agreed upon by 89% of the participating experts, 11% strongly disagreed with their inclusion. The following practices demonstrate this wide dispersion of opinions from the experts:

1. Assist students in developing a particular style which fits their personality by individualizing instruction.
2. Continuously question and trouble students' minds by using such techniques as redirecting original questions and developing provocative situations.

As displayed in Table 1, nine of the recommended practices were eliminated as being inappropriate for enhancing creativity in a college of education classroom. These nine practices were:

1. Maintain an atmosphere which is competitive.

   A competitive atmosphere in a college of education classroom was considered inappropriate by 78% of the experts. One of the experts stated that while competition may be stimulating for some students, he was undecided as to how effective the technique might be for college students. Another expert believed that competition has two sides, not being

seen similarly by all. Some experts were undecided as to the appropriateness of this practice, but one expert suggested that students in a college of education should learn to be cooperative as well as competitive.

2. Serve as a model which the students can challenge or imitate and improve upon.

One expert who disagreed with this practice suggested that professors act more human. He believed that students will try harder without feeling intimidated in their work if they observe professors' errors. Thirty-three percent of the experts considered this recommended practice as inappropriate in a college of education classroom.

3. Understand students empathetically and motivate them through listening and a real presence of mind.

To understand students empathetically and motivate them through listening was considered jargon by one expert. He indicated the impossibility of this practice when there may be as many as 30 students in the classroom. Sixty-seven percent of the experts approved of this practice in the college of education classroom.

4. De-emphasize the concern for verbalization.

The concern for verbalization should be emphasized according to some of the experts. One concern was that

the degree of verbalization should depend upon the particular situation. This practice was deleted from the list of suggestions submitted to the faculty members and graduate students since only 56% of the experts considered it applicable for a college of education classroom.

5. Coordinate learning rather than dispense knowledge.

Two experts reported that both the coordination of learning and the dispensing of knowledge are important practices for enhancing creativity in a college of education classroom. The suggestion was made by one expert to replace the idea of coordinating learning with coordinating thinking. He stated that learning is a "low-down conception practice." This practice was considered inappropriate in a college of education classroom by 33% of the participating experts.

6. Give tests which contain simple completion items to encourage some transfer recall.

The recommended practice concerned with tests containing simple completion items was considered as an inappropriate practice by 56% of the panel of experts. One of the experts commented that the statement was too vague. He believed that some testing is necessary, that creativity is often based upon facts.

7. Relate the inventions of one individual to the accomplishments of others.

Some members of the panel indicated their disapproval of relating inventions of one individual to the accomplishments of others. Two of the experts suggested that such a practice should be used cautiously because students may be discouraged by its use. The recommended practice was considered appropriate by 44% of the panel of experts, 33% disagreed with its use, and 22% were undecided.

8. Bring students to the knowledge of self-actualization by assisting them in identifying their own strengths and limitations.

Although six of the experts agreed with this recommended practice, there was some disagreement. One received comment was that students should be brought to the "experience" rather than the "knowledge" of self-actualization. It was also felt that students' strengths and limitations are potentially almost unlimited.

9. Plan course work in a fashion which encourages the growth of a wholesome skepticism and curiosity.

Some indecision and disagreement of this recommended practice was identified by the researcher. An

idea expressed by an expert was the gullibility of encouraging "skepticism" and "curiosity" in students. Another opinion expressed by one expert involved the concept that college may be too late to develop creativity in most students.

To show the degree of agreement among the selected panel of experts, information was presented in Table 2. For interpretation of the results, the following categories were devised by the researcher:

Greater than 90%

75 - 90%

50 - 74%

Less than 50%

Those nine practices which fell below the 50th percentile were considered to be inappropriate for the enhancement of creativity in a college of education classroom. One of the nine deleted recommended practices fell within the 1st quartile: maintain an atmosphere which is competitive.

The 30 practices upon which more than two-thirds of the selected panel of experts agreed were placed in the form of an opinionnaire. This list of suggestions of practices (Appendix B) was then reacted upon by 20 faculty members and 513 graduate students in the College of Education at East Carolina University, Greenville, North Carolina.

TABLE 2

Degrees of Experts' Agreement to Recommended Practices

A	B	C	D	E
Recommended Practices	Greater Than 90%	75 - 90%	50 - 74%	Less Than 50%
1		X		
2		X		
3				X
4		X		
5		X		
6	X			
7	X			
8	X			
9		X		
10			X	
11			X	
12			X	
13			X	
14	X			
15	X			
16			X	
17	X			
18	X			
19		X		
20		X		
21		X		
22	X			
23		X		
24	X			
25		X		
26		X		
27		X		
28	X			
29		X		
30	X			
31		X		
32		X		
33		X		
34		X		
35			X	
36	X			
37				X
38				X
39		X		

CHAPTER V

Identification and Discussion of Participating University and Faculty Members

This chapter which is concerned with the identification of the participating university and its faculty members, will be divided into two parts. First, a description of East Carolina University and the College of Education will be presented, and; second, a discussion of participating faculty members with an analysis of their responses to the applicability of the suggestions of practices to a college of education classroom will be included.

PART I

Identification of the Participating University

East Carolina University, located in Greenville, North Carolina, is a state institution which offers training in education and the liberal arts. Since it was chartered in 1907, East Carolina University has moved from a normal school to a multi-purpose university. Graduate programs were authorized in 1929, and the sixth-year certification programs became available in 1969. Higher education in North Carolina was restructured in 1971, making East Carolina University one of the sixteen constituent parts of the University of North Carolina.

At East Carolina University, 60% of the faculty members hold doctorates. Enrollment is approximately 13,000. The university is accredited by the Southern Association, the NCATE, and other associations relating to the various schools.

The College of Education at East Carolina University offers undergraduate and graduate degrees in counseling education, educational administration and supervision, elementary education, secondary education and special education. A sixth year of preparation for principals, curriculum instructional specialists, and superintendents is also offered.

PART II

Faculty Members and an Analysis of Responses

To be a participant in this research project, a faculty member was to meet specific criteria established by the researcher. First, a member had to hold the rank of an assistant professor, associate professor, or professor in the College of Education at East Carolina Universtiy. Second, each qualifying member had to be teaching at least one 400-level graduate course on campus during the 1976-77 winter term.

The 20 participating faculty members were requested to respond to the applicability of the list of suggestions of practices for enhancing creativity in a college of education classroom (Appendix B). Their responses were compiled and reported in Table 3. Column B indicates the percentage of the faculty members which agreed (strongly agreed and agreed) with each suggestion of practices. As indicated in Table 3, twenty-one of the practices were considered applicable for the enhancement of creativity in a college of education classroom by more than 90% of the participating faculty members. Thirteen of the practices were considered appropriate by 100% of the faculty members.

Although indecision was low for most suggestions of practices, 45% of the faculty members were undecided about one practice: occasionally challenge students to the edge of frustration so that they

TABLE 3

Summary of Faculty Responses

A	B	C		D		E		F		G		H
Practice	% Col. 1 & 2	Strongly Agree No.	%	Agree No.	%	Undecided No.	%	Disagree No.	%	Strongly Disagree No.	%	Total Responses
1	90	6	.30	12	.60	1	.05	0	-	1	.05	20
2	95	12	.60	7	.35	0	-	0	-	1	.05	20
3	100	15	.75	5	.25	0	-	0	-	0	-	20
4	100	18	.90	2	.10	0	-	0	-	0	-	20
5	70	8	.40	6	.30	4	.20	2	.10	0	-	20
6	100	14	.70	6	.30	0	-	0	-	0	-	20
7	95	14	.70	5	.25	1	.05	0	-	0	-	20
8	90	10	.50	8	.40	2	.10	0	-	0	-	20
9	100	14	.70	6	.30	0	-	0	-	0	-	20
10	100	12	.60	8	.40	0	-	0	-	0	-	20
11	100	14	.70	6	.30	0	-	0	-	0	-	20
12	100	9	.45	11	.55	0	-	0	-	0	-	20
13	85	9	.45	8	.40	3	.15	0	-	0	-	20
14	95	11	.55	8	.40	1	.05	0	-	0	-	20
15	95	14	.70	5	.25	1	.05	0	-	0	-	20
16	100	15	.75	5	.25	0	-	0	-	0	-	20
17	95	7	.35	12	.60	1	.05	0	-	0	-	20
18	90	10	.50	8	.40	2	.10	0	-	0	-	20
19	90	9	.45	9	.45	1	.05	1	.05	0	-	20
20	100	5	.25	14	.70	1	.05	0	-	0	-	20

TABLE 3

Summary of Faculty Responses

A	B	C		D		E		F		G		H
Practice	% Col. 1 & 2	Strongly Agree No.	%	Agree No.	%	Undecided No.	%	Disagree No.	%	Strongly Disagree No.	%	Total Responses
21	45	3	.15	6	.30	9	.45	2	.10	0	-	20
22	100	10	.50	10	.50	0	-	0	-	0	-	20
23	95	8	.40	9	.45	3	.15	0	-	0	-	20
24	100	14	.70	6	.30	0	-	0	-	0	-	20
25	95	11	.55	8	.40	1	.05	0	-	0	-	20
26	80	9	.45	7	.35	3	.15	1	.05	0	-	20
27	100	8	.40	12	.60	0	-	0	-	0	-	20
28	80	8	.40	8	.40	3	.15	1	.05	0	-	20
29	100	8	.40	12	.60	0	-	0	-	0	-	20
30	95	13	.65	6	.30	1	.05	0	-	0	-	20

may utilize all of their talents. Fifteen percent of participating faculty members were undecided about the following practices:

1. Stress the transferring of training by experiencing various sensory and inventive methods.
2. Involve students in activities consisting of incomplete data for determining solutions.
3. Reward students appropriately and eagerly for any behavior which demonstrated inventiveness.
4. Continuously question and trouble students' minds by using such techniques as redirecting original questions and developing provocative situations.

Disagreement among the faculty members to the applicability of the suggestions of practices for the enhancement of creativity in a college of education classroom was low. The highest degree of disagreement was 10% on two practices.

1. Allow the students to refuse to accept the known as their goal and encourage them to reach beyond toward the unknown.
2. Occasionally challenge students to the edge of frustration so that they may utilize all of their talents.

Table 4 was then developed which indicated the agreements of faculty members to the following degree:

Greater than 90%

75 - 90%

50 - 74%

Less than 50%

As indicated in Table 4, faculty members rated 21 of the suggestions of practices within the ninth decile. One suggestion of practice for enhancing creativity in a college of education rated below the 50th percentile: allow the students to refuse to accept the known as their goal and encourage them to reach beyond toward the unknown. One suggestion fell within the 3rd quartile: occasionally challenge students to the edge of frustration so that they may utilize all of their talents. One suggestion was strongly agreed upon by 90% of the participating faculty members: arrange the classroom confortable so that students are encouraged to be more active participants.

The ranking of the 30 suggestions of practices for enhancing creativity in a college of education classroom were identified on Table 5. Rankings were obtained according to the number of points that each practice received. A weighted scale was utilized by the researcher when determining total points for each suggestion. To rank these practices according to faculty agreement, points were assigned to each of the five degrees:

	SCALE VALUE
Strongly agree	+2
Agree	+1
Undecided	0
Disagree	-1
Strongly disagree	-2

TABLE 4

Degrees of Faculty Members' Agreement to

Suggestions of Practices

A	B	C	D	E
Suggestion of Practices	Greater Than 90%	75 - 90%	50 - 74%	Less Than 50%
1		X		
2	X			
3	X			
4	X			
5			X	
6	X			
7	X			
8		X		
9	X			
10	X			
11	X			
12	X			
13		X		
14	X			
15	X			
16	X			
17	X			
18		X		
19		X		
20	X			
21				X
22	X			
23	X			
24	X			
25	X			
26		X		
27	X			
28		X		
29	X			
30	X			

The complete list of suggestions of practices as ranked by assistant professors, associate professors, and professors is presented in Appendix E. Results of the weighted rankings altered the position of some practices within the list of suggestions of practices for enhancing creativity in a college of education classroom, although insignificantly in most cases. The position of one practice was notably changed: provide opportunities for students to practice deferred judgment. These differences occurred because of the weighting placed upon the extreme agreements or disagreements.

TABLE 5

Weighted Ranking of Faculty Members' Responses to the Suggestions of Practices

	1		2		3		4		5			
Practice	Times 2		Times 1		Times 0		Times - 1		Times - 2		Total Points	Rank
	No.	Pts.	No.	Pts.	No.	Pts.	No.	Pts.	No.	Pts.		
1	6	12	12	12	1	0	0	0	1	- 2	22	28
2	12	24	7	7	0	0	0	0	1	- 2	29	15
3	15	30	5	5	0	0	0	0	0	0	35	2
4	18	36	2	2	0	0	0	0	0	0	38	1
5	8	16	6	6	4	0	2	-2	0	0	20	29
6	14	28	6	6	0	0	0	0	0	0	34	3
7	14	28	5	5	1	0	0	0	0	0	33	7
8	10	20	8	8	2	0	0	0	0	0	28	17
9	14	28	6	6	0	0	0	0	0	0	34	3
10	12	24	8	8	0	0	0	0	0	0	32	9
11	14	28	6	6	0	0	0	0	0	0	34	3
12	9	18	11	11	0	0	0	0	0	0	29	15
13	9	18	8	8	3	0	0	0	0	0	26	21
14	11	22	8	8	1	0	0	0	0	0	30	11
15	14	28	5	5	1	0	0	0	0	0	33	7
16	15	30	5	5	0	0	0	0	0	0	30	11
17	7	14	12	12	1	0	0	0	0	0	26	21
18	10	20	8	8	2	0	0	0	0	0	28	17

TABLE 5

Weighted Ranking of Faculty Members' Responses to the Suggestions of Practices

	1		2		3		4		5			
Practice	Times 2		Times 1		Times 0		Times - 1		Times - 2		Total Points	Rank
	No.	Pts.	No.	Pts.	No.	Pts.	No.	Pts.	No.	Pts.		
19	9	18	9	9	1	0	1	- 1	0	0	26	21
20	5	10	14	14	1	0	0		0	0	24	26
21	3	6	6	6	9	0	2	- 2	0	0	10	30
22	10	20	10	10	0	0	0		0	0	30	11
23	8	16	9	9	3	0	0		0	0	25	24
24	14	28	6	6	0	0	0		0	0	34	3
25	11	22	8	8	1	0	0		0	0	30	11
26	9	18	7	7	3	0	1	- 1	0	0	25	24
27	8	16	12	12	0	0	0		0	0	28	17
28	8	16	8	8	3	0	1	- 1	0	0	23	27
29	8	16	12	12	0	0	0		0	0	28	17
30	13	26	6	6	1	0	0		0	0	32	9

CHAPTER VI

Participating Students and An Analysis of Their Responses

This chapter presents information about the selection of students responding to the list of suggestions of practices for enhancing creativity in a college of education classroom. An analysis of their responses to the opinionnaire will also be discussed.

To be a respondent to the opinionnaire, one had to be a graduate student enrolled during the winter term, 1976-77, in at least one of the 400-level graduate courses taught by a participating assistant professor, associate professor, or professor at East Carolina University. If a student were enrolled in more than one of the qualifying classes, he or she was exempt from further participation in the study.

A schedule of class participation in the opinionnaire was cooperatively arranged by the College of Education during the week of January 17-21, 1977. All classes were visited by the researcher or her assistant during this pre-arranged 30-minute block of allotted class time. During this time 513 graduate students were requested to react to the list of suggestions of practices for enhancing creativity in a college of education classroom by marking their opinions to the Likert Scale of strongly agree, agree, disagree, or strongly disagree.

Response sheets were originally tabulated by individual classes, then summarized by the total number of classes (Table 6). Sums were provided for each of the 30 suggestions of practices for enhancing creativity in a college of education classroom.

Sub-totals for each of the five degrees of agreement were also provided. From the sub-totals for each suggestion of practices, percentages were obtained. Sub-totals for strongly agree and agree were combined to reach a percentage of student agreement for each suggestion of practice as indicated in Column B of Table 6. Responses of graduate students to the list of suggestions of practices were quite diversified. Two suggestions of practices were strongly agreed upon (greater than 60%):

1. Encourage students to be open to new experiences and a great diversity of stimuli (63%).
2. Arrange the classroom comfortably so that students are encouraged to be more active participants (65%).

Data in Table 6 indicates that greater than 15% of the 513 participating graduate students disagreed with the applicability of some practices in a college of education classroom. These practices include the following:

1. Occasionally challenge students to the edge of frustration so that they may utilize all of their talents (35%).
2. Establish an atmosphere in which the teacher and students are free from conformity (17%).

TABLE 6

Summary of Responses of Graduate Students

A	B	C		D		E		F		G		H
Suggestion of Practice	% of Students Agreeing	Strongly Agree No.	%	Agree No.	%	Undecided No.	%	Disagree No.	%	Strongly Disagree No.	%	Total Responses
1	71	142	28	219	43	63	12	76	15	13	2	513
2	75	199	39	184	36	57	11	59	11	14	3	513
3	94	270	53	210	41	24	5	9	2	0	0	513
4	95	331	65	155	30	18	4	7	1	2	0	513
5	68	123	24	225	44	121	24	32	6	12	2	513
6	94	220	43	259	51	23	4	10	2	1	0	513
7	97	324	63	173	34	11	2	5	1	0	0	513
8	79	183	36	223	43	68	13	35	7	4	1	513
9	91	253	49	215	42	29	6	15	3	1	0	513
10	95	229	45	255	50	17	3	11	2	1	0	513
11	95	286	56	199	39	22	4	6	1	0	0	513
12	93	251	49	226	44	31	6	5	1	0	0	513
13	83	170	33	259	50	70	14	14	3	0	0	513
14	81	177	34	241	47	83	16	10	2	2	0	513
15	95	249	49	234	46	20	4	9	2	1	0	513
16	93	279	54	201	39	28	5	5	1	0	0	513
17	80	187	36	225	44	77	15	23	4	1	0	513
18	89	185	36	271	53	49	10	8	2	0	0	513

TABLE 6

Summary of Responses of Graduate Students

A	B	C		D		E		F		G		H
Suggestion of Practice	% of Students Agreeing	Strongly Agree No.	%	Agree No.	%	Undecided No.	%	Disagree No.	%	Strongly Disagree No.	%	Total Responses
19	86	217	42	224	44	41	8	29	6	2	0	513
20	69	101	20	251	49	150	29	9	2	2	0	513
21	40	62	12	142	28	131	26	137	27	41	8	513
22	90	183	36	279	54	36	7	13	3	2	0	513
23	68	110	21	240	47	107	21	49	10	7	1	513
24	91	246	48	219	43	44	9	3	1	1	0	513
25	92	236	46	235	46	31	6	10	2	1	0	513
26	84	196	38	236	46	56	11	24	5	1	0	513
27	85	200	39	234	46	53	10	23	4	3	1	513
28	55	88	17	194	38	128	25	73	14	30	6	513
29	84	150	29	283	55	62	12	14	3	4	1	513
30	84	248	48	187	36	55	11	22	4	1	0	513

3. Continuously question and trouble students' minds by using such techniques as redirecting original questions and developing provocative situations (20%).

To indicate the agreements of the 513 participating graduate students, Table 7 was developed. The following categories were designed by the researcher to present the results:

Greater than 90%

75 - 90%

50 - 74%

Less than 50%

As indicated in Table 7, agreements of the 513 graduate students to the list of suggestions of practices varied more than those of faculty members. Students rated the following five suggestions of practices for enhancing creativity in a college of education classroom between 50 and 74%:

1. Establish an atmosphere in which the teacher and the students are free from conformity.
2. Provide opportunities for students to practice deferred judgment.
3. Involve the students in activities consisting of incomplete data.
4. Continuously question and trouble students' minds by using such techniques as redirecting original questions and developing provocative situations.

TABLE 7

Degrees of Students' Agreement to

The Suggestions of Practices

A	B	C	D	E
Suggestions of Practices	Greater Than 90%	75 - 90%	50 - 74%	Less Than 50%
1			X	
2		X		
3	X			
4	X			
5			X	
6	X			
7	X			
8		X		
9	X			
10	X			
11	X			
12	X			
13		X		
14		X		
15	X			
16	X			
17		X		
18		X		
19		X		
20			X	
21				X
22		X		
23			X	
24	X			
25	X			
26		X		
27		X		
28			X	
29		X		
30		X		

5. Allow the students to refuse to accept the known as their goal and encourage them to reach beyond the unknown.

Only one suggestion of practices received less than 50%. Graduate students did not believe that professors should challenge students to the edge of frustration so that they may utilize all of their talents.

According to the information presented in Tables 6 and 7, twelve suggestions of practices received greater than 90% agreement from the participating graduate students. The following suggestions were considered most applicable to a college of education classroom in which creativity is enhanced:

1. Maintain an appropriate balance between freedom and control (94%).
2. Arrange the classroom comfortably so that students are encouraged to be more active participants (95%).
3. Gain self-confidence and improve skills by solving problems of progressively greater complexity (94%).
4. Encourage students to be open to new experiences and a great diversity of stimuli (97%).
5. Demonstrate a sense of love and respect for all students (91%).
6. Tolerate ambiguity, disorder, and paradoxes (95%).
7. Encourage and welcome original and unheralded questions, ideas, and responses (95%).

8. Provide opportunities for the students to get involved intellectually and emotionally by working out their own interests and self-initiated projects (93%).
9. Involve students in such tasks as planning, organizing, communicating, decision-making, evaluating, and other known skills (95%).
10. Maintain sufficient flexibility in methods, materials, content, and grouping (93%).
11. Encourage "cross-fertilization" by relating knowledge from one field to knowledge from another field (91%).
12. Design and utilize erercises which strengthen verbal fluency (92%).

The list of suggestions of practices for enhancing creativity in a college of education classroom were ranked according to the total points obtained. To rank these practices according to student agreement, a scale value which identified points to be assigned to each of the five degrees was used by the researcher.

	SCALE VALUE
Strongly agree	+2
Agree	+1
Undecided	0
Disagree	-1
Strongly disagree	-2

Results of the weighted ranking altered the position of some practices within the list of suggestions of practices, although insignificantly in most cases. The position of practice 29 was unusually changed: incorporate different techniques which will allow the students to perform autonomously as they search for new understanding (Table 8). These differences occur because of the weighting placed upon the extreme agreements or disagreements.

Practice 21 received more negative responses: occasionally challenge students to the edge of frustration so that they may utilize all of their talents. Many students indicated to the researcher that too much pressure caused unnecessary anxieties and did not cause them to utilize more of their talents.

Practice 20 received an unusually high number of undecided responses. It may be inferred that many students failed to understand the item since the researcher was often asked by the respondents the definition of deferred judgments.

Students tended to rate practice seven considerably higher than most suggestions of practices for enhancing creativity in a college of education classroom. A desire to be presented a great diversity of stimuli and new experiences was motivating to the graduate students.

A significant number of indecisions were indicated on practice 28: continuously question and trouble students' minds by using techniques as redirecting original questions and developing provocative

TABLE 8

Weighted Ranking of Students' Responses

To the Suggestions of Practices

	1		2		3		4		5			
Practice	Times 2		Times 1		Times 0		Times - 1		Times - 2		Total Points	Rank
	No.	Pts.	No.	Pts.	No.	Pts.	No.	Pts.	No.	Pts.		
1	149	299	219	219	63	0	76	- 76	13	- 26	568	25
2	199	398	184	184	57	0	59	- 59	14	- 28	613	21
3	270	540	210	210	24	0	9	- 9	0	0	759	5
4	331	662	155	155	18	0	7	- 7	2	- 4	820	2
5	123	246	225	225	121	0	32	- 32	12	- 24	479	27
6	220	440	259	259	23	0	10	- 10	1	- 2	707	12
7	324	648	173	173	11	0	5	- 5	0	0	826	1
8	183	366	223	223	68	0	35	- 35	4	- 8	616	20
9	253	506	215	215	29	0	15	- 15	1	- 2	734	8
10	229	458	255	255	17	0	11	- 11	1	- 2	752	6
11	286	572	199	199	22	0	6	- 6	0	0	777	3
12	251	502	226	226	31	0	5	- 5	0	0	733	9
13	170	340	259	259	70	0	14	- 14	0	0	613	21
14	177	354	241	241	83	0	10	- 10	2	- 4	601	23
15	249	498	234	234	20	0	9	- 9	1	- 2	739	7
16	279	558	201	201	28	0	5	- 5	0	0	764	4
17	187	374	225	225	77	0	23	- 23	1	- 2	620	19
18	185	370	271	271	49	0	8	- 8	0	0	649	18

TABLE 8

Weighted Ranking of Students' Responses

To the Suggestions of Practices

	1		2		3		4		5			
Practice	Times 2 No.	Pts.	Times 1 No.	Pts.	Times 0 No.	Pts.	Times - 1 No.	Pts.	Times - 2 No.	Pts.	Total Points	Rank
19	217	434	224	224	41	0	29	- 29	2	- 4	683	14
20	101	202	251	251	150	0	9	- 9	2	- 4	458	28
21	62	124	142	142	131	0	137	-137	41	- 82	321	30
22	183	366	279	279	36	0	13	- 13	2	- 4	654	15
23	110	220	240	240	107	0	49	- 49	7	- 14	495	26
24	246	492	219	219	44	0	3	- 3	1	- 2	712	11
25	236	472	235	235	31	0	10	- 10	1	- 2	715	10
26	196	392	236	236	56	0	24	- 24	1	- 2	650	17
27	200	400	234	234	53	0	23	- 23	3	- 6	651	16
28	88	176	194	194	128	0	73	- 73	30	- 60	383	29
29	150	300	283	283	62	0	14	- 14	4	- 8	589	24
30	248	496	187	187	55	0	22	- 22	1	- 2	703	13

situations. Fifty-five percent agreed to its appropriateness and 20% considered the practice to be inappropriate for enhancing creativity in a college of education classroom. This suggestion of a practice, as many students indicated to the researcher, causes unnecessary pressures and anxieties.

Although no practices were totally agreed upon by respondents as appropriate ones for enhancing creativity in a college of education classroom, only 1% of the students considered six of the practices as inappropriate. At least 48% of the respondents also strongly agreed with the applicability of the following suggestions of practices in a college of education classroom:

1. Arrange the classroom comfortably so that students are encouraged to be more active participants.
2. Encourage and welcome original and unheralded questions, ideas, and responses.
3. Provide opportunities for students to get involved intellectually and emotionally by working out their own interests and self-initiated projects.
4. Maintain sufficient flexibility in methods, materials, content, and grouping.
5. Encourage "cross-fertilization" by relating knowledge from one field to knowledge from another field.
6. Encourage students to be open to new experiences and a great diversity of stimuli.

Practices four and seven received more than 60% of responses in the strongly agree category. With such a high percentage of agreement, the validity of these suggestions of practices may be considered as effective practices for enhancing creativity in a college of education classroom.

1. Arrange the classroom comfortably so that students are encouraged to be more active participants.
2. Encourage students to be open to new experiences and a a great diversity of stimuli.

CHAPTER VII

Summary, Conclusions, and Recommendations

Summary

The problem of this study was to develop a list of suggestions of practices which would be beneficial to college of education faculty members who are concerned with and have the desire to enhance creativity in their classroom. More specifically, this study was broken down into four sub-problems: (1) to identify recommended practices to enhance creativity in any classroom through a review of literature published since 1965; (2) to identify recommended practices which more than two-thirds of a selected panel of experts indicate as appropriate in a college of education classroom; (3) to identify those suggestions of practices which are agreed upon by faculty members and graduate students in the College of Education, East Carolina University, Greenville, North Carolina; and (4) after careful consideration of responses from experts, faculty members, and graduate students, to develop a list of suggestions of practices for enhancing creativity in a college of education classroom.

The participants in this study consisted of the following: nine experts selected according to their extensive research in the

area of creativity; 20 assistant professors, associate professors, and professors teaching at least one 400-level graduate education course in the College of Education at East Carolina University; and 513 graduate students enrolled in a 400-level course taught by a participating assistant professor, associate professor, or professor in the College of Education at East Carolina University. A review of professional literature was the basis for the establishment of the 39 recommended practices reacted upon by the selected panel of experts. The recommendations of the panel of experts determined the practices contained in the list of suggestions of practices to enhance creativity in a college of education classroom to which faculty members and graduate students indicated their opinions.

Major Findings

The major findings derived from this study are as listed below:

1. Of the approximately 1000 recommended practices for enhancing creativity in any classroom which were identified by the researcher in a review of the literature, 39 were identified by as many as three different authors.
2. From the 39 recommended practices reacted upon by the selected panel of experts, nine practices were deleted as inappropriate practices in a college of education classroom. These practices were:

a. Maintain an atmosphere which is competitive.

b. Bring students to the knowledge of self-actualization by assisting them in identifying their own strengths and limitations.

c. Plan course work in a fashion which encourages the growth of a wholesome skepticism and curiosity.

d. De-emphasize the concern for verbalization.

e. Serve as a model which students can challenge or imitate and improve upon.

f. Understand students empathetically and motivate them through listening and a real presence of mind.

g. Coordinate learning rather than dispense knowledge.

h. Give tests which contain simple completions items to encourage some transfer recall.

i. Relate the inventions of one individual to the accomplishments of others.

3. Faculty members responding to the list of suggestions of practices which a majority of the panel of experts considered appropriate for a college of education classroom rated the following practices below 75%:

a. Allow the students to refuse to accept the known as their goal and encourage them to reach beyond toward the unknown (70%).

b. Occasionally challenge students to the edge of frustration so that they may utilize all of their talents (45%).

4. Faculty members strongly agreed upon 21 of the suggestions of practices appropriate for enhancing creativity in a college of education classroom (greater than 90%).

5. Of the participating faculty members, 90% strongly agreed with one practice: arrange the classroom comfortable so that students are encouraged to be more active participants.

6. Graduate students responding to the list of suggestions of practices to which a majority of the selected panel of experts agreed as appropriate for enhancing creativity in a college of education classroom, considered six of the suggestions of practices as inappropriate (below 75%):

   a. Establish an atmosphere in which the teacher and the students are free from conformity (71%).

   b. Provide opportunities for students to practice deferred judgments (69%).

   c. Allow the students to refuse to accept the known as their goal and encourage them to reach beyond toward the unknown (68%).

d. Involve students in activities consisting of incomplete data for determining solutions (68%).

e. Continuously question and trouble students' minds by using such techniques as redirecting original questions and developing provocative situations (55%).

f. Occasionally challenge students to the edge of frustration so that they may utilize all of their talents (40%).

7. Responses of graduate students to the list of suggestions of practices were more diversified than faculty members. Two suggestions of practices were strongly agreed upon for their applicability to the college of education (greater than 60%):

a. Encourage students to be open to new experience and a great diversity of stimuli (63%).

b. Arrange the classroom comfortably so that students are encouraged to be more active participants (65%).

8. When comparing the responses of faculty members and graduate students and their ranking of practices, there were two suggestions of practices which differed notably (Table 9):

a. Provide students opportunities to practice such techniques as attribute listing, checklist procedures, and synectics (faculty members ranked

this practice as eleventh; graduate students ranked the practice twenty-third).

b. Encourage "cross-fertilization" by relating knowledge from one field to knowledge from another field (faculty members ranked the practice third; graduate students ranked the practice eleventh).

9. A comparison of rating percentiles of faculty members and students in Table 9 revealed four meaningful differences (20% or greater):

a. Tolerate ambiguity, disorder, and paradoxes (faculty members, 95%; students, 75%).

b. Provide opportunities for students to practice deferred judgment (faculty, 100%; students, 69%).

c. Involve students in activities consisting of incomplete data for determining solutions (faculty, 95%; students, 68%).

d. Continuously question and trouble students' minds by using such techniques as redirecting original questions and developing provocative situations (faculty, 80%; students, 55%).

10. A comparison of rating percentiles of the selected panel of experts and faculty members on Table 9 revealed meaningful differences in the following practices:

TABLE 9

Comparison of Responses of Experts,

Faculty Members, and Graduate Students

(STRONGLY AGREE & AGREE)

Practices	Experts Percentages	Faculty Percentages	Students Percentages
1	78	90	75
2	78	95	75
3	89	100	94
4	89	100	95
5	100	70	68
6	100	100	94
7	100	95	97
8	89	90	79
9	100	100	91
10	100	100	95
11	100	100	95
12	100	100	93
13	89	85	83
14	89	95	81
15	89	95	95
16	100	100	93
17	78	95	80
18	100	90	89
19	89	90	86
20	89	100	69
21	78	45	40
22	100	100	90
23	90	95	68
24	100	100	91
25	78	95	92
26	89	80	84
27	89	100	85
28	89	80	55
29	100	100	84
30	78	95	84

a. Allow the students to refuse to accept the known as their goal and encourage them to reach beyond toward the unknown (experts, 100%; faculty, 70%).

b. Occasionally challenge students to the edge of frustration so that they may utilize all of their talents (experts, 78%; faculty, 45%).

11. A comparison of rating percentiles of the selected panel of experts and graduate students on Table 9 revealed meaningful differences in the ratings of the following:

a. Allow the students to refuse to accept the known as their goal and encourage them to reach beyond toward the unknown (experts, 100%; students, 68%).

b. Continuously challenge students to the edge of frustration so that they may utilize all of their talents (experts, 78%; students, 30%).

c. Continuously question and trouble students' minds by using such techniques as redirecting original questions and developing provocative situations (experts, 89%; students, 55%).

Discussion of the Developed List of Practices

After careful consideration of responses received from the selected panel of experts, faculty members, and graduate students, a list of suggestions of practices to enhance creativity in a

college of education classroom was developed by the researcher (Appendix G). A criterion for the selection of practices to be included on the list of suggestions of practices required that individual percentages for the panel of experts, faculty members, and graduate students must indicate an agreement of 80% or more. This level of agreement was considered by the researcher to be high enough to substantiate their inclusion in the developed list. These 20 suggestions of practices to enhance creativity in a college of education classroom include the following:

1. Maintain an appropriate balance between freedom and control.
2. Arrange the classroom comfortably so that students are encouraged to be more active participants.
3. Gain self-confidence and improve skills by solving problems of progressively greater complexity.
4. Encourage students to be open to new experiences and a great diversity of stimuli.
5. Demonstrate a sense of love and respect for all students.
6. Tolerate ambiguity, disorder, and paradoxes.
7. Encourage and welcome original and unheralded questions, ideas, and responses.
8. Provide opportunities for students to get involved intellectually and emotionally by working out their own interests and self-initiated projects.

9. Stress the transferring of training by experiencing various sensory and inventive methods.
10. Provide students opportunities to practice such techniques as attribute listing, checklist procedures, and synectics.
11. Involve students in such tasks as planning, organizing, communicating, decision-making, evaluating, and other known skills.
12. Maintain sufficient flexibility in methods, materials, content, and grouping.
13. Provide problem-solving situations by applying problem-solving principles--developing various hypotheses and searching for alternative methods.
14. Organize small group practice sessions so that students may work together to intensify judgments and produce many ideas.
15. Challenge students by providing various meaningful assignments and observe the outcomes.
16. Encourage "cross-fertilization" by relating knowledge from one field to knowledge from another field.
17. Reward students appropriately and eagerly for any behavior which demonstrates inventiveness.
18. Provide brainstorming activities which allow free-wheeling of the imagination and encourage quantity to breed quality.

19. Incorporate different techniques which will allow the students to perform autonomously as they search for new understanding.

20. Design and utilize exercises which strengthen verbal fluency.

Although practice 20 did not meet the above criterion for inclusion, the researcher assumed that the practice would have been agreed upon if all students had understood the meaning of practicing deferred judgments. Agreement between faculty members and experts was greater than 85%.

A second suggestion of practice which was not agreed upon by 80% of the students was practice eight. Agreement between faculty and experts was greater than 88% while 79% of the students agreed upon the appropriateness of the practice.

Practices eight and twenty were also identified a substantial number of times (above the minimum of three) in the researcher's review of the literature. For these reasons the following two practices were added to the above list:

21. Provide opportunities for students to practice deferred judgment.

22. Assist students in developing a particular style which fits their personality by individualizing instruction.

There was sufficient agreement among the experts, faculty members, and graduate students that the developed list of suggestions of

practices constitute techniques for enhancing creativity in a college of education classroom. Although the list was developed specifically for the college of education classroom, the suggestions of practices may have possible application in other teacher-learner situations. Such a list of suggestions may be beneficial to faculty members in college classrooms other than college of education classrooms. Teachers in high schools, middle schools, and elementary schools may find the developed list applicable to their classrooms because of the practicality of each suggested practice. These practices do not require any radical demands from normal classroom procedures.

Some of the suggestions of practices may even be applicable in other situations such as businesses and industries which require creative results. Consequently, the developed list of suggestions of practices may be useful to other researchers who are concerned with the enhancement of creativity.

Conclusions and Recommendations

In view of the findings of this study, the following conclusions and recommendations were considered:

1. Through the utilization of defensible professional literature, an adequate list of recommended practices in a college of education classroom was established.
2. The selected panel of experts agreed upon 30 of the recommended practices as applicable to a college of education classroom.

3. The 20 participating assistant professors, associate professors, and professors agreed upon 25 of the 30 practices as applicable to a college of education classroom.

4. Graduate students agreed (90% or greater) to the appropriateness of 13 of the suggestions of practices for enhancing creativity in a college of education classroom. When the researcher examined agreement of those practices above 80%, there were 21 practices included. With the substantially higher number of participating students, the researcher assumed that the latter percentage of agreement to their appropriateness was a valid one.

5. College personnel should work for fuller implementation of practices for enhancing creativity in a college of education classroom.

6. Students should be allowed more input into the procedures to be carried out in the college of education classroom.

7. College of education faculty members need to be concerned about the practices which will enhance creativity in their students and incorporate those considered appropriate by experts in the field of creativity, other faculty members, and students.

8. All colleges of education should consider the inclusion of a course specifically designed for assisting

teachers in the utilization of practices appropriate for enhancing creativity in college students.

Suggestions for Further Studies

Through the development of the list of suggestions of practices for enhancing creativity in a college of education classroom, the following suggestions implicating further research were identified:

1. The list of suggestions of practices for enhancing creativity in a college of education classroom should be used in an experimental study. In a college of education, controlled groups utilizing the list of suggestions of practices developed by the researcher may be compared to groups which do not use any of those practices to determine differences in creativity demonstrated by college students.
2. A course of study should be designed for college faculty members to assist them in identification and utilization of appropriate practices for enhancing creativity in their students.
3. Studies involving creativity at the college and university levels are needed, especially in the field of education, psychology, and human development.

4. Studies revealing empirical data results in the area of creativity in college of education classrooms need to be conducted which college faculty members may find applicable to their classes.

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APPENDIX A

A LIST OF SUGGESTIONS OF PRACTICES FOR ENHANCING CREATIVITY IN THE COLLEGE OF EDUCATION CLASSROOM

The following key should be used to indicate your responses to the suggestions of practices.

1 - strongly agree
2 - agree
3 - undecided
4 - disagree
5 - strongly disagree

PRACTICES	Degree of Appropriateness 1	2	3	4	5	Remarks or Modifications
A. CLASSROOM CLIMATE 1. Establish an atmosphere in which the teacher and the students are free from conformity.						
2. Establish a psychologically secure, non-threatening, and supportive atmosphere where criticism is seldom used and risks can be taken without fear of penalties; eliminate competition for grades.						
3. Maintain an atmosphere which is competitive.						
4. Maintain an appropriate balance between freedom and control.						
5. Arrange the classroom comfortably so that students are encouraged to be more active participants.						
B. DEVELOPING STUDENT ATTITUDES 6. Allow the students to refuse to accept the known as their goal and encourage them to reach beyond the unknown.						

PRACTICE	Degree of Appropriateness 1	2	3	4	5	Remarks or Modifications
7. Gain self-confidence and improve skills by solving problems of progressively greater complexity.						
8. Encourage students to be open to new experiences and a great diversity of stimuli.						
9. Assist students in developing a particular style which fits their personality by individualizing instruction.						
10. Bring students to the knowledge of self-actualization by assisting them in identifying their own strengths and limitations.						
11. Plan course work in a fashion which encourages the growth of a wholesome skepticism and curiosity.						
C. PROFESSIONAL ATTITUDES 12. Serve as a model which the students can challenge or imitate and improve upon.						
13. Understand students empathetically and motivate them through listening and real presence of mind.						
14. Demonstrate a sense of love and respect for all students.						
15. Tolerate ambiguity, disorder, and paradoxes.						
16. De-emphasize the concern for verbalization.						

PRACTICES	Degree of Appropriateness 1	2	3	4	5	Remarks or Modifications
D. INSTRUCTIONAL STRATEGIES 17. Encourage and welcome original and unheralded questions, ideas, and responses.						
18. Provide opportunities for students to get involved intellectually and emotionally by working out their own interest and self-initiated projects.						
19. Stress the transferring of training by experiencing various sensory and inventive methods.						
20. Provide students opportunities to practice such techniques as attribute listing, checklist procedures, and synectics.						
21. Involve students in such tasks as planning, organizing, communicating, decision-making, evaluating, and other known skills.						
22. Maintain sufficient flexibility in methods, materials, content, and grouping.						
23. Provide an experimental or laboratory situation often.						
24. Provide problem-solving situations by applying problem-solving principles--developing various hypotheses and searching for alternative methods.						
25. Organize small group practice sessions so that students may work together to intensify judgments and produce many ideas.						
26. Provide opportunities for students to practice deferred judgment.						

PRACTICES	Degree of Appropriateness 1	2	3	4	5	Remarks or Modifications
27. Occasionally challenge students to the edge of frustration so that they may utilize all of their talents.						
28. Challenge students by providing various and meaningful assignments and observe the outcomes.						
29. Involve students in activities consisting of incomplete data for determining solutions.						
30. Encourage "cross-fertilization" by relating knowledge from one field to knowledge from another.						
31. Design and utilize exercises which strengthen verbal fluency.						
32. Reward students appropriately and eagerly for any behavior which demonstrates inventiveness, honesty, and responsibility.						
33. Provide brainstorming activities which allow freewheeling of the imagination and encourage quantity to breed quality.						
34. Continuously question and trouble students' minds by using such techniques as redirecting original questions and developing provocative situations.						
35. Coordinate learning rather than dispense knowledge.						
36. Incorporate different techniques which will allow the students to perform autonomously as they search for new understanding.						

PRACTICES	Degree of Appropriateness 1	2	3	4	5	Remarks or Modifications
37. Give tests which contain simple completion items to encourage some transfer recall.						
38. Relate the inventions of one individual to the accomplishments of others.						
39. Provide each student with the opportunity to participate in a leadership role.						

NOTES:

1. All practices recommended by three or more authors are included in the questionnaire although some may be in conflict.

2. Practices have been placed under only one heading although some may be appropriate under several headings.

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Please sign and return this slip if you request the compiled list of suggestions with the statements and explanations verifying their inclusion in the questionnaire.

Dear

I am involved in the writing of my dissertation entitled, "A List of Suggestions of Practices for the Enhancing of Creativity in the College of Education Classroom." This list of practices was devised from a review of relevant literature published since 1965, and each practice had to be identified by a minimum of three different authors. These practices were not recommended specifically for higher education; therefore, this study is concerned with their appropriateness at the college and university levels.

The second phase of my study is to ask experts to judge the degree of appropriateness of these practices for those professors who are concerned with enhancing creativity in their classrooms. A review of the literature has identified you as an expert in the field of creativity who might assist me in this effort. If you consent to assist me in my study, please review the attached list of practices and indicate the degree of appropriateness for use in the college of education classroom and make any remarks or modifications you deem necessary. Any additional suggestions of practices will be most welcome.

Upon receipt of your questionnaire, along with those from other selected experts, responses will be compiled and then administered to students and professors in the College of Education at The University of Oklahoma during the summer session, 1976.

I will be most happy to share with you the entire 1200 suggestions with authors and sources revealed in the review of the literature published since 1965, the summary of opinions from the panel of experts, and the compiled responses from professors and students in the College of Education.

I would appreciate your returning the completed questionnaire with a cover letter validating the content of the domain being studied at your earliest convenience. Your assistance is greatly appreciated.

Sincerely,

Betty E. Atkinson
College of Education
University of Oklahoma
820 Van Vleet Oval
Norman, Oklahoma 73019

Gene D. Shepherd
Professor of Education
College of Education

BEA/rw

APPENDIX B

OPINIONNAIRE

THE PURPOSE OF THIS OPINIONNAIRE IS TO ASSIST THE RESEARCHER IN THE DEVELOPMENT OF SUGGESTIONS OF PRACTICES FOR THE ENHANCING OF CREATIVITY IN THE COLLEGE OF EDUCATION. THIS LIST OF PRACTICES WAS DEVISED FROM A REVIEW OF RELEVANT LITERATURE TO WHICH NINE WELL-KNOWN EXPERTS IN THE FIELD OF CREATIVITY HAVE REACTED. SUCH EXPERTS INCLUDE E. PAUL TORRANCE, J. P. GUILFORD, CALVIN W. TAYLOR, MORRIS I. STEIN, WILLIAM B. MICHAEL, PAUL HEIST, SIDNEY J. PARNES, DONALD W. MACKINNON, AND JAMES A. SMITH.

THE FOLLOWING KEY SHOULD BE USED TO INDICATE YOUR RESPONSES TO THE SUGGESTIONS OF PRACTICES YOU FEEL ARE APPLICABLE IN A COLLEGE OF EDUCATION CLASSROOM:

(1) STRONGLY AGREE
(2) AGREE
(3) UNDECIDED
(4) DISAGREE
(5) STRONGLY DISAGREE

A. CLASSROOM CLIMATE:

1. Establish an atmosphere in which the teacher and the students are free from conformity.

2. Establish a psychologically secure, non-threatening, and supportive atmosphere where criticism is seldom used and risks can be taken without fear of penalties; eliminate competition for grades.

3. Maintain an appropriate balance between freedom and control.

4. Arrange the classroom comfortably so that students are encouraged to be more active participants.

B. DEVELOPING STUDENT ATTITUDES:

5. Allow the students to refuse to accept the known as their goal and encourage them to reach beyond toward the unknown.

6. Gain self-confidence and improve skills by solving problems of progressively greater complexity.

7. Encourage students to be open to new experiences and a great diversity of stimuli.

8. Assist students in developing a particular style which fits their personality by individualizing instruction.

C. PROFESSIONAL ATTITUDES:

9. Demonstrate a sense of love and respect for all students.

10. Tolerate ambiguity, disorder, and paradoxes.

D. INSTRUCTIONAL STRATEGIES:

11. Encourage and welcome original and unheralded questions, ideas, and responses.

12. Provide opportunities for students to get involved intellectually and emotionally by working out their own interests and self-initiated projects.

13. Stress the transferring of training by experiencing various sensory and inventive methods.

14. Provide students opportunities to practice such techniques as attribute listing (listing peculiarities, qualities, traits, characteristics; looking at problems from a variety of viewpoints), checklist procedures (analyzing problems from the standpoint of a number of questions), and synectics (using similarities and comparisons).

15. Involve students in such tasks as planning, organizing, communicating, decision-making, evaluating, and other known skills.

16. Maintain sufficient flexibility in methods, materials, content, and grouping.

17. Provide an experimental or laboratory situation often.

18. Provide problem-solving situations by applying problem-solving principles--developing various hypotheses and searching for alternative methods.

19. Organize small group practice sessions so that students may work together to intensify judgments and produce many ideas.

20. Provide opportunities for students to practice deferred judgment.

21. Occasionally challenge students to the edge of frustration so that they may utilize all of their talents.

22. Challenge students by providing various and meaningful assignments and observe the outcomes.

23. Involve students in activities consisting of incomplete data for determining solutions.

24. Encourage "cross-fertilization" by relating knowledge from one field to knowledge from another field.

25. Design and utilize exercises which strengthen verbal fluency.

26. Reward students appropriately and eagerly for any behavior which demonstrates inventiveness.

27. Provide brainstorming activities which allow free-wheeling of the imagination and encourage quantity to breed quality.

28. Continuously question and trouble students' minds by using such techniques as redirecting original questions and developing provocative situations.

29. Incorporate different techniques which will allow the students to perform autonomously as they search for new understanding.

30. Provide each student with the opportunity to participate in a leadership role.

APPENDIX C

LETTER TO EAST CAROLINA UNIVERSITY

AND THE COLLEGE OF EDUCATION

101 Canterbury Court
Robin Lake Estates
Dudley, North Carolina 28333
December 7, 1976

Dr. Douglas R. Jones
Dean, College of Education
154 Speight
East Carolina University
Greenville, North Carolina

Dear Dr. Jones:

It was a pleasure talking with you Monday, and I appreciate your willingness to seek approval from East Carolina University for assistance in gathering the data necessary for my dissertation.

My proposal for study at the doctoral level, as previously discussed with you, involves the development of a list of suggestions of practices to enhance creativity in a college of education. Relevant literature was reviewed and specific practices were identified at least three times by three different authors. These practices were compiled by the researcher, evaluated by nine well-known experts as identified in the literature, and again compiled by the researcher to be reacted upon by assistant professors, associate professors, and/or full professors in a college of education. Also to be involved are graduate students enrolled in 400-numbered education courses taught by those holding a rank of assistant professor or higher.

Since I now reside in Goldsboro, North Carolina, the convenience for gathering data at East Carolina University is much greater than at the University of Oklahoma which has been approved by my doctoral committee. The questionnaire will be administered by me and should only require about fifteen minutes of class time.

Enclosed is a letter of explanation to be distributed to each professor involved, a copy of the questionnaire to be reacted upon by the previously mentioned professors and students enrolled in their graduate classes, and a general information sheet to be completed by each graduate student involved.

Thank you very much for considering assisting me in my study by allowing me a few minutes in the graduate classes. Your cooperation is most sincerely appreciated.

Sincerely,

Betty E. Atkinson
University of Oklahoma

Enclosures

APPENDIX D

LETTER OF EXPLANATION TO PARTICIPATING

FACULTY MEMBERS

Dear Dr. _____:

I am involved in the writing of my dissertation entitled, "A List of Suggestions of Practices for the Enhancing of Creativity in the College of Education Classroom." This list of practices was devised from a review of relevant literature published since 1965, and each had to be identified by a minimum of three different authors. The practices were not recommended specifically for higher education; therefore, this study is concerned with their appropriateness at the college and university levels.

The second phase of my study was to ask experts to judge the degree of appropriateness of these practices for those professors who are concerned with enhancing creativity in their classrooms. A review of literature revealed the following as experts in the field of creativity, all of whom have favorably responded to the questionnaire:

Morris I. Stein
Professor of Psychology
New York University

William B. Michael
Department of Educational Psychology
University of Southern California

E. Paul Torrance
Department of Educational Psychology
University of Georgia

J. P. Guilford
Professor of Psychology
University of Southern California

Paul Heist
Department of Education
University of California at Berkeley

Donald W. MacKinnon, Director
Institute for Personality Assessment & Research
University of California at Berkeley

Sidney J. Parnes
Department of Creative Studies
State University of New York

James A. Smith (Ret.)
Department of Education
State University of New York

Calvin W. Taylor
Department of Psychology
University of Utah

Responses of these experts have been studied and compiled to develop the enclosed questionnaire which is to be administered to students and professors in the College of Education at East Carolina University, Greenville, North Carolina, during the Winter term, 1976-77.

At your convenience, I would appreciate your permission to administer the enclosed questionnaire to your graduate classes. Permission from East Carolina University has previously been granted. Your completion of the enclosed questionnaire will also be most appreciated. I will visit you soon to arrange a conventient time for you and your classes, and to pick up your completed questionnaire.

Thank you very much for your cooperation.

Sincerely,

Betty E. Atkinson
College of Education
University of Oklahoma
Norman, Oklahoma

Enclosure

APPENDIX E

Rank of Faculty Members' Responses to

the Suggestions of Practices

1. Arrange the classroom comfortably so that students are encouragd to be more active participants.
2. Maintain an appropriate balance between freedom and control.
3. Gain self-confidence and improve skills by solving problems of progressively greater complexity.
3. Demonstrate a sense of love and respect for all students.
3. Encourage and welcome original and unheralded questions, ideas, and responses.
3. Encourage "cross-fertilization" by relating knowledge from one field to knowledge from another field.
7. Encourage students to be open to new experiences and a great diversity of stimuli.
7. Involve students in such tasks as planning, organizing, communicating, decision-making, evaluating, and other known skills.
9. Tolerate ambiguity, disorder, and paradoxes.
9. Provide each student with the opportunity to participate in a leadership role.
11. Provide students opportunities to practice such techniques as attribute listing, checklist procedures, and synectics.
11. Maintain sufficient flexibility in methods, materials, content, and grouping.
11. Challenge students by providing various and meaningful assignments and observe the outcomes.

11. Design and utilize exercises which strengthen verbal fluency.

15. Provide opportunities for students to get involved intellectually and emotionally by working out their own interests and self-initiated projects.

16. Assist students in developing a particular style which fits their personality by individualizing instruction.

16. Provide problem-solving situations by applying problem-solving principles--developing various hypotheses and searching for alternative methods.

16. Provide brainstorming activities which allow free-wheeling of the imagination and encourage quantity to breed quality.

16. Incorporate different techniques which will allow the students to perform autonomously as they search for new understanding.

20. Stress the transferring of training by experiencing various sensory and inventive methods.

20. Provide an experimental or laboratory situation often.

20. Organize small group practice sessions so that students may work together to intensify judgments and produce many ideas.

23. Reward students appropriately and eagerly for any behavior which demonstrates inventiveness.

23. Involve students in activities consisting of incomplete data for determining solutions.

25. Establish a psychologically secure, non-threatening, and supportive atmosphere where criticism is seldom used and risks can be taken without fear of penalties; eliminate competition for grades.

26. Provide opportunities for students to practice deferred judgment.

27. Continuously question and trouble students' minds by using such techniques as redirecting original questions and developing provocative situations.

28. Establish an atmosphere in which the teacher and the students are free from conformity.

29. Allow the students to refuse to accept the known as their goal and encourage them to reach beyond toward the unknown.

30. Occasionally challenge students to the edge of frustration so that they may utilize all of their talents.

APPENDIX F

Rank of Students' Responses to the

Suggestions of Practices

1. Encourage students to be open to new experiences and a great diversity of stimuli.
2. Arrange the classroom comfortably so that students are encouraged to be more active participants.
3. Encourage and welcome original and unheralded questions, ideas, and responses.
4. Maintain sufficient flexibility in methods, materials, content, and grouping.
5. Maintain an appropriate balance between freedom and control.
6. Tolerate ambiguity, disorder, and paradoxes.
7. Involve students in such tasks as planning, organizing, communicating, decision-making, evaluating, and other known skills.
8. Demonstrate a sense of love and respect for all students.
9. Provide opportunities for students to get involved intellectually and emotionally by working out their own interests and self-initiated projects.
10. Design and utilize exercises which strengthen verbal fluency.
11. Encourage "cross-fertilization" by relating knowledge from one field to knowledge from another field.
12. Gain self-confidence and improve skills by solving problems of progressively greater complexity.

13. Provide each student with the opportunity to participate in a leadership role.

14. Organize small group practice sessions so that students may work together to intensify judgments and produce many ideas.

15. Challenge students by providing various and meaningful assignments and observe the outcomes.

16. Provide brainstorming activities which allow free-wheeling of the imagination and encourage quantity to breed quality.

17. Reward students appropriately and eagerly for any behavior which demonstrated inventiveness.

18. Provide problem-solving situations by applying problem-solving principles--developing various hypotheses and searching for alternative methods.

19. Provide an experimental or laboratory situation often.

20. Assist students in developing a particular style which fits their personality by individualizing instruction.

21. Stress the transferring of training by experiencing various sensory and inventive methods.

22. Establish a psychologically secure, non-threatening, and supportive atmosphere where criticism is seldom used and risks can be taken without fear of penalties; eliminate competition for grades.

23. Provide students opportunities to practice such techniques as attribute listing, checklist procedures, and synectics.

24. Incorporate different techniques which will allow the students to perform autonomously as they search for new understanding.

25. Establish an atmosphere in which the teacher and the students are free from conformity.

26. Involve students in activities consisting of incomplete data for determining solutions.

27. Allow the students to refuse to accept the known as their goal and encourage them to reach beyond toward the unknown.

28. Provide opportunities for students to practice deferred judgment.

29. Continuously question and trouble students' minds by using such techniques as redirecting original questions and developing provocative situations.

30. Occasionally challenge students to the edge of frustration so that they may utilize all of their talents.

APPENDIX G

THE DEVELOPMENT OF SUGGESTIONS OF PRACTICES FOR ENHANCING CREATIVITY IN THE COLLEGE OF EDUCATION CLASSROOM

1. Maintain an appropriate balance between freedom and control.
2. Arrange the classroom comfortably so that students are encouraged to be more active participants.
3. Gain self-confidence and improve skills by solving problems of progressively greater complexity.
4. Encourage students to be open to new experiences and a great diversity of stimuli.
5. Demonstrate a sense of love and respect for all students.
6. Tolerate ambiguity, disorder, and paradoxes.
7. Encourage and welcome original and unheralded questions, ideas, and responses.
8. Provide opportunities for students to get involved intellectually and emotionally by working out their own interests and self-initiated projects.
9. Stress the transferring of training by experiencing various sensory and inventive methods.
10. Provide students opportunities to practice such techniques as attribute listing (Listing peculiarities, qualities, traits, characteristics; looking at problems from a variety of viewpoints), checklist procedures (analyzing problems from the standpoint of a number of questions), and synectics (using similarities and comparisons.

11. Involve students in such tasks as planning, organizing, communicating, decision-making, evaluating, and other known skills.

12. Maintain sufficient flexibility in methods, materials, content, and grouping.

13. Provide problem-solving situations by applying problem-solving principles--developing various hypotheses and searching for alternative methods.

14. Organize small group practice sessions so that students may work together to intensify judgments and produce many ideas.

15. Challenge students by providing various and meaningful assignments and observe the outcomes.

16. Encourage "cross-fertilization" by relating knowledge from one field to knowledge from another field.

17. Reward students appropriately and eagerly for any behavior which demonstrated inventiveness.

18. Provide brainstorming activities which allow free-wheeling of the imagination and encourage quantity to breed quality.

19. Incorporate different techniques which will allow the students to perform autonomously as they search for new understanding.

20. Provide opportunities for students to practice deferred judgment.

21. Assist students in developing a particular style which fits their personality by individualizing instruction.

22. Design and utilize exercises which strengthen verbal fluency.