THE EFFECTS OF DIRECTED EXPERIENCES WITH CHILDREN UPON THE KNOWLEDGES AND UNDERSTANDINGS OF COLLEGE STUDENTS IN A COURSE IN CHILD PSYCHOLOGY

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PREFACE

This study of the effects of directed experiences with children upon the knowledges and understandings of college students in a course in child psychology is an out-growth of the writer's desire to increase the interest and effectiveness of her own teaching of a college course in child psychology, and of her hope of securing objective data to substantiate or disprove certain current educational theory.

The writer is indebted to Dr. Ida T. Smith who served as major adviser for her incisive, constructive criticism, for her helpful attitude, and for her faith and encouragement, which were a constant source of inspiration. She is also grateful to Mr. Guy A. Lackey, Dr. J. Andrew Holley, Dr. Millard Scherich, and Dr. Morris S. Wallace who acted as her advisory committee and aided in the completion of the study.

Acknowledgments are gratefully accorded those faculty members of Southeastern State College and Oklahoma Agricultural and Mechanical College who assisted in the study, and to those teachers, students, and children whose cooperation was essential for the development of the study.

An expression of gratitude is also due the deans and directors of research in colleges and universities who, by correspondence, gave the information necessary to survey the present field.

Recognition is also extended to Dr. E. Lee Vincent of Pennsylvania College for Women who suggested the examination in child psychology used to secure the data which formed the backbone of the investigation and to

Dr. Lester D. Crow of Brooklyn College, co-author of the test, who gave permission to use the examination.

Finally, the writer is deeply grateful to the members of her family for their patience and encouragement.

Without the help of all of these persons, the study could not have been completed.

S. M. L.

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CHAPTER I

DEVELOPMENT OF THE PROBLEM

Introduction

Rapid progress has been made in the teaching of child psychology during recent years. New techniques have been discovered, new information has been contributed, new methods of disseminating this information have been perfected, and new measurements of behavior patterns have been validated. Although many important developments may be found in research literature, most educational methods used in teaching child psychology today, as evidenced by a recent survey of college instructional methods, may be described as: (1) lecture, reading, and discussion; or (2) reading of theory, casual observation of children, and discussion based on such observation.

Much research remains to be done in the field of methodology, especially with reference to the most effective procedures for the teaching of such courses at the college level. While many authorities seem to agree that establishing a systematic acquaintance with children themselves, as the lectures and reading in the child psychology field progress, would give students who have such experiences an advantage over those students who only listen to lectures about children, read about them, and observe them casually, a review of research fails to show any objective measure of the value of directed experiences with children upon the knowledges, skills, attitudes, and understandings developed in a course in child psychology.

This study, therefore, sought an answer to the question, "How will directed experiences with children affect the knowledges and understandings of child psychology developed by the students in a college class in that area?"

Purposes of the Study

The over-all purpose of the study was to determine whether those college students who had directed experiences with children learned more, as much, or less child psychology, as measured by a specific achievement test, than did those who did not have such directed experiences.

The specific aims of the study were to determine the statistical significance of the following measures: (1) the difference between the means of the raw scores of the control and experimental groups on a child psychology test at the initial testing; (2) the difference between the means of the raw scores of the control and experimental groups on the same child psychology test at the final testing; (3) the difference between the means of the raw scores of the control groups at the initial and final testing on the same test; and (4) the difference between the means of the raw scores of the experimental group at the initial and final testing on the same test.

Limitations of the Study

The study was confined to students at Southeastern State College, Durant, Oklahoma, who were enrolled in Child Psychology 323 between May, 1954, and February, 1955.

It was further limited to measurement of those knowledges and

understandings which are tested by the Crow and Crow Examination in Child Psychology (1953 Edition).[1]

Hypothesis

The study was based upon the hypothesis that if college students have directed experiences with children, they will learn more child psychology, as measured by a specific achievement test, than do students who do not have such directed experiences.

Assumptions

The following assumptions were made: directed experiences are more meaningful than undirected experiences; since the study of the learning process indicates that an individual learns by his experience and reacts in terms of what he has learned, the kinds of experiences he has will affect his learnings; and the results of the teaching methods used can be measured by the differences in scores obtained on a child psychology test given at the beginning and at the end of the experiment.

Definition of Terms

For the purposes of this study, it is necessary to define certain terms as they are to be used:

Child psychology, as used in this study, refers to the portion of the field of psychology that investigates the behavior and development of the individual prior to the age of maturity and applies those facts and principles necessary to understanding the child.[2]

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[1]Lester D. Crow and Alice Crow. Child Psychology. (New York: Barnes and Noble, Incorporated, 1953), pp. 215-255.

[2]Carter V. Good, Editor, Dictionary of Education (New York: McGraw-Hill Book Company, Incorporated, 1945), p. 318.

Experience is defined as the acquisition of knowledge, attitudes, or skills through one's own perception and participation; or knowledge, attitudes, or skills so acquired.[3]

Direct means to regulate the activities or course of; specifically, to govern or control; to give guidance to.[4]

Knowledge connotes the accumulated facts, truths, principles, and information accessible to the human mind.[5]

Understandings suggest mental power, faculty, or function whereby the meaning of phenomena or propositions is apprehended by the individual, as distinguished from intuitive or pure reason.[6]

Practicum is (1) a course of instruction aimed at closely relating the study of theory and practical experience, both usually being carried on simultaneously; (2) an academic exercise consisting of study and practical work.[7]

Statistically significant concerns the treatment of the data.[8] As used in this study, it refers to a significance level at the one per cent level of confidence.

Experimentation is the name given to the type of educational research in which the investigator controls the educative factors to which a child

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[3] Ibid., p. 160.

[4] Webster's New International Dictionary (Springfield, Massachusetts: G. and C. Merriam Company, 1944), p. 285.

[5] Good, Dictionary of Education, p. 233.

[6] Howard C. Warren, Editor, Dictionary of Psychology (Boston, Massachusetts: Houghton-Mifflin Company, 1934), p. 285.

[7] Good, Dictionary of Education, p. 304.

[8] E. F. Lindquist, Statistical Analysis in Educational Research (Boston, Massachusetts: Houghton-Mifflin Company, 1940), p. 18.

or a group is subjected during the period of inquiry and observes the resulting achievement.[9]

t is the ratio of a statistic to its standard error. The significance level of t is a function of both its magnitude and the number of degrees of freedom. Significant and significance are technical terms in the field of statistics.[10]

Organization of the Study

Chapter I of this thesis presents the development of the problem and emphasizes the purpose of the study. Chapter II summarizes a review of the research of the related field of literature.

Chapter III describes the experimental investigation undertaken to accept or reject the hypothesis. Chapter IV presents and analyzes the data and summarizes the findings which lead to the conclusions and recommendations.

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[9] Bureau of Educational Research, University of Illinois Bulletin, 48-61 (University of Illinois Press, 1930), p. 15.

[10] Albert K. Kurtz and Harold A. Edgerton, Statistical Dictionary (New York: John Wiley and Sons, Incorporated, 1939), p. 174.

CHAPTER II

REVIEW OF RELATED LITERATURE

Introduction

Literature comparing the various methods of teaching at the college level presents a combination of fact and opinion. While conclusive research is scarce, the topic of methodology has continued to hold great interest in the literature of education and psychology.

The purpose of this chapter is to review studies and writings pertinent to the problem. The literature is summarized under the following heads: (1) child psychology in general; (2) instructional procedures at the college level; (3) methods of teaching child psychology; (4) educational psychology in teacher education; (5) content of courses in educational psychology; (6) experiences with children as a teaching technique; and (7) current research in the field, including experimental studies in progress in centers of research and methods used in teaching the course.

Child Psychology in General

Every aspect of psychology would undoubtedly profit by further investigation.[1]

The history of research in the field of child psychology is closely

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[1]Gordon Hendrickson and Glenn M. Blair, "Educational Psychology," Encyclopedia of Educational Research. Walter S. Monroe, Editor, 1950 Edition (New York: The Macmillan Company, 1950), pp. 346-352.

related to that of general psychology.[2] As a field for research, child psychology probably begins with the founding of the first psychological laboratory by Wundt in 1879 and the investigations published in the following years by one of his American students, G. Stanley Hall, on the Contents of Children's Minds on Entering School (1883) and his two-volume study, Adolescence (1904).[3]

Relatively little in the way of child study was published during the first half of the nineteenth century, but the latter part is rich in contributions. Biographical reports of the behavior of young children include: Taine's Infant Development (1876), with special emphasis upon the child's development of speech; Darwin's Biographical Sketch of an Infant (1877), in which child development is presented as a significant phase of human survival; and Preyer's The Mind of the Child. Preyer's contribution, published in 1882, served as a basis for later scientific observation and experiment. He is often referred to as the "father of child psychology."[4]

Credit for introducing the experimental approach to child study goes to Hall, who was a psychologist at Clark University. Hall and his assistants, including such psychologists of later note as Gesell, Goddard, Kuhlmann, and Terman, conducted many studies of child and adolescent behavior, interests, and abilities; thus Hall's study marked the beginning of the child-study movement and instigated thousands of studies.[5]

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[2]E. G. Boring, A History of Experimental Psychology (New York: Century, 1929), p. 699.

[3]Monroe, Encyclopedia of Educational Research, 1950 Edition, p. 347.

[4]Lester D. Crow and Alice Crow, Child Psychology, op. cit., p. 4.

[5]Gardner Murphy, An Historical Introduction to Modern Psychology (New York: Harcourt, 1929), p. 470.

By the turn of the twentieth century, ground work had been laid for extensive and intensive research in child psychology. The twentieth century already has come to be designated as "the century of the child."

The development of psychological and educational measurements provided more powerful tools for research workers.[6] The study of individual differences was fostered in the 1890's by Cattel. It produced the first mental age scale by Binet in 1908. Rice began working with spelling tests about 1895. In 1904, Thorndike published his book, Theory of Mental and Social Measurements. By the time of America's entry into World War I, the American Psychological Association placed its service at the disposal of the War Department and, utilizing largely the as yet unpublished work of Otis, prepared the Army Alpha, the first of a long succession of group tests destined to receive wide use. Ross[7] states that although the Army Alpha had antecedents developed over the preceding thirty years, none of these earlier tests can be said to have passed beyond the experimental stage. The Binet tests had been revised for American use by Terman and others. Otis had devised a group intelligence test, and a number of educational tests and scales had been produced. Since 1918, the rapid development of instruments for measurement has facilitated the direct study of psychological problems in the school situation.

Work in this field has not been limited to that of psychologists and educators. An adequate understanding of the factors and phases of human development necessitates study and research in many branches of scientific inquiry: biology, physiology, sociology, mental hygiene, and psychiatry.

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[6] Monroe, Encyclopedia of Educational Research, 1950 Edition, p. 350.

[7] C. C. Ross, Measurements in Today's Schools (New York: Prentice-Hall, Incorporated, 1947), p. 40.

The work of Darwin and Mendel in genetics paved the way for more intensive investigations of the child's native constitution and biologically inherited potentialities. Gesell, formerly at Yale, made and reported thousands of detailed observations of children under ten years of age. Studies of cultural patterns, as reported by Mead, have been of sociological value. The mental hygiene movement spread quickly after Beers and Meyer, in 1908, became interested in the treatment of the mentally ill. Conflict, frustration, indecision, anxiety, and inability to make a satisfactory adjustment to life situations are common among children and adolescents; therefore, the research of psychiatry and psychoanalysis has contributed to the study of abnormal personality.

Instructional Procedures at the College Level

Research bearing upon instructional procedures at the college level, which is largely a product of the period since 1920, includes both experimental and questionnaire investigations.[8] In many of the experimental studies, the investigator has been meticulously careful in equating experimental and control groups, in controlling variable factors, and in formulating generalizations.

On the other hand, a number of experimental studies are open to criticism. In some of these, the student population was so small and the experimental period so short that the findings do not contribute much to the generalizations. But, in Good's[9] opinion, a more serious weakness lies in the measurement of student achievement. In practically all cases,

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[8]Carter V. Good, "Colleges and Universities, Part VIII. Methods of Teaching," Encyclopedia of Educational Research, Walter S. Monroe, Editor, 1952 Edition (New York: The Macmillan Company, 1952), p. 273.

[9]Ibid., p. 274.

measurement was by means of new-type tests. Although these instruments possess certain inherent values, they have definite limitations, among them the failure to measure all the outcomes which are claimed for some instructional procedures. Problem and essay tests, comprehensive examinations, and term papers are also imperfect measuring instruments.

Research in the area of teaching methods has dealt not only with instructional procedures but also with the making of assignments, the techniques of motivation, and the means of evaluating achievement. Questionnaire investigations have been concerned with students' interests, preferences, study habits, attitudes, and the like. But the total research for methods of teaching at the college level is more fragmentary than that at the elementary and secondary levels. Generalizations are more difficult to make.

A review of research reveals that an experimental procedure is almost always shown to be equivalent or superior to the control method with which it is compared. Good[10] reasons that this may be due to the fact that the newness of the procedure appeals to students and instructors and stimulates their reactions.

A number of experimental studies at the college level have contributed to the generalization that the lecture method with large groups is an effective method of instruction. Experiments involving recitation and discussion methods have shown them also to be useful means of teaching. Studies involving the project method, problem method, independent study plan, and student growth during an internship in practice teaching indicate significant differences over the more conventional methods with which they have been compared. Therefore, it may be concluded that any

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[10] Ibid., p. 275.

instructional procedure which stimulates the interest of the student and produces desirable activity which leads to growth and accomplishment is useful.[11]

Remmers[12] compared three methods of instruction in elementary psychology classes: Lecture-recitation, with two lectures a week for groups of 150 to 170 students and one recitation period a week with the large group broken into four separate classes; small recitation groups from 35 to 40 students meeting three times a week; and a large lecture group of 125 students meeting three times a week for lectures only.

Under the lecture-recitation plan, average achievement tended to be somewhat higher and retention more permanent than under the small-group recitation procedure. Student attitudes, however, tended to favor the small-group recitation. Lectures three times a week were approximately as effective as the lecture-recitation plan and slightly more effective than the small-group recitation.

Remmer's study shows that a conservative interpretation of these results leads to the conclusion that the lecture method is fully as effective for the average student "as is the less formal, more time and energy consuming—in a word, more costly—method of the small recitation, at least in so far as the measures of achievement used are able to reveal this."

Good[13] describes several studies in which experimentation was done with the lecture procedure. Gaskill permitted one group of psychology

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[11] Ibid., p. 274.

[12] R. H. Remmers, Learning, Effort, and Attitudes as Affected by Three Methods of Instruction in Elementary Psychology. Purdue University Bulletin, Vol. 33, No. 6. Studies in Higher Education, No. 21, 1933.

[13] Good, Encyclopedia of Educational Research, p. 274.

students to listen to a lecture at a broadcasting studio while another was to hear the talk over radio sets. A "small but significant" superiority was found for the radio-listening group. Tyler and his assistants compared the achievement, as evidenced by final marks in the course, in elementary psychology of 850 students who met three days a week for regular classroom work and two days for laboratory work with 4,518 students who attended lecture sections five days a week. The laboratory students obtained somewhat higher marks, but there is no justification for generalization because they had no control over the groups or the instruction.

In a study to determine the relative effectiveness of lecture and directed discussion methods of teaching tests and measurements, Carlson[14] used six instructors and 228 cases for his design. The study was conducted in an Air Force Conductor Course which allowed close control and supervision of the academic schedule, the instructors, and the students. When subjected to the t-test of significance, results indicated no difference between the two combination methods in student achievement in five criterion areas: total achievement, developing a fund of information, developing ability to apply information, developing skills to work with quantitative material, and developing student interest for further study.

An investigation reported by Ruja[15] sought to measure and contrast

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[14]Carl Raymond Carlson, A Study of the Relative Effectiveness of Lecture and Directed Discussion Methods of Teaching Tests and Measurements to Prospective Air Force Instructors (A Dissertation, University of Minnesota, 1953).

[15]Harry Ruja, "Outcomes of Lecture and Discussion Procedures in Three College Courses," Journal of Experimental Education, XXII (September, 1952; June, 1954), p. 386. A. S. Barr, Editor, Dembar Publications, Incorporated, 303 East Wilson Street, Madison 3, Wisconsin.

some outcomes of lecture and discussion methods in college teaching. Summer, 1954, and Fall, 1954-1955, were used for the experiment at San Diego State College. The same assignments were made to both the lecture and discussion groups, the same textual materials were used, and the same examinations were administered.

Ruja served as instructor in all classes. The experimenter was seeking the validity of these hypotheses; vix., students in discussion classes in comparison with students in lecture classes: (a) exhibit greater gains in emotional adjustments; and (b) show greater subject-matter mastery, as measured by course examinations. The examinations were all objective. Four examinations were administered, including a comprehensive final. Ruja computed split-half co-efficients of reliability for all examinations, correcting for length with the Spearman-Brown formula. They ranged from .56 to .91. The students wrote free comments anonymously.

On the performance outcomes, the difference was significant at better than the one per cent level of correlation. The coefficient of correlation (Pearson r) between the A C E scores of these Psychology I students and their performance scores is .485. Ruja set up four hypotheses, only the first of which was not supported. In short, lecture proved superior in subject matter mastery for the students. Discussion proved superior in all classes in attitude toward instructor. In all other respects the two methods showed no significant differences.

Green[16] made a comparison between methods of presenting materials to equated groups of college students in elementary psychology. He used

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[16]E. B. Green, "Certain Aspects of Lecture and Guided Reading," School and Society, 39 (1934), pp. 619-624.

the lecture, unguided reading, and guided reading, with and without notes. The type where the subject read the test question and searched for the answer was "very superior" to either the lecture method or unguided reading. However, since the test questions appear to have been used for guiding the reading and also for measuring the achievement, this result was to be expected.

The personal preference of college students themselves with regard to instructional procedures was considered by Brooks and Davis in a recent investigation.[17] To discover how students believed that they learned best, the writers prepared a questionnaire and administered it to 196 members of these groups. Lecturing by the professor was named by the largest number of students as the most valuable teaching method. The other four, in order of frequency of mention, were: cooperative planning by students and professor of course, content, and procedures; informal class discussion led by the professor; and optional reading assignments in terms of needs and interest.

Although lecturing by the professor was the method listed most often as the first choice, in terms of first choice there was no method which was selected by a majority of the students as being the best or most valuable procedure.

On the basis of the student responses to the questionnaire administered, some of the following generalizations seem to be justified: (1) college students are ready for more varied and differentiated teaching procedures than are probably being used in many college classrooms; (2) strongly endorsed by students were such practices as cooperative

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[17] LaVerene A. Brooks, and Louie R. Davis, "Student Opinion Regarding Instructional Procedures on the College Level," Teachers College Record, Volume 56, No. 6 (March, 1953), p. 331.

student-teacher planning, committee work and study, the informal class discussion and out-of-class social activities; (3) students believe that college instructors have important guidance responsibilities. The student-professor conference was considered "extremely valuable" by an overwhelming majority of the respondents; and (4) although endorsement is given to newer teaching practices, the lecture method still commands respect and support.

Methods of Teaching Child Psychology

The purpose of this section is to review the literature on the methodology of teaching child psychology itself. Since the field was meager, it was impossible to attempt any extensive investigation of the area. Horace English has contributed the most important discussion, but, although he cites over three hundred references, none of them applies specifically to the evaluation of directed contacts or with case studies in the teaching of psychology.[18] The method was described briefly and without special comment in the Journal of Educational Psychology for 1952 and is no doubt used more and more generally.

In his study on the teaching of educational psychology, John E. Horrocks[19] stresses three principles; namely, (1) that the teaching of the facts and principles of educational psychology must constitute a coordinate part of the undergraduate teacher training sequence; (2) that an attempt must be made to foster the social and emotional adjustment of

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[18] Warrin R. Baller, John E. Horrocks, et al, "The Teaching of Educational Psychology: Current Practices and Effective Innovations in Introductory Courses," Journal of Educational Psychology, 43 (January, 1952), pp. 3-30.

[19] John E. Horrocks, "An Approach to Teaching Educational Psychology," Journal of Educational Psychology, 43 (January, 1952), pp. 9-15.

the students; and (3) the course should provide a supervised training program for graduate students who hope to become college teachers of educational psychology. The students must have an opportunity to apply actively what they learn and must be examined for application as well as for theory. The difficulty in securing subjects for psychology study is stressed. He states that the public school offers little help. If it is used at all, it must be in some town or district at a distance from the university. Among other sources suggested are children not in school for the moment but taking part in recreational activities on playgrounds or elsewhere, children in settlement houses, members of scout groups, and members of other elementary educational psychology departments in the university.

L. B. Murphy[20] believes that biographical reports are helpful. Each student observes at least one child. One student may observe a child who is having difficulty in keeping up with the others and note the stages that child goes through in his response to help. Another student may observe twins who have been separated for the first time; another, a child of divorced parents; a third, a child who has recently moved into entirely different surroundings. One student may be given the task of studying the effect of a more successful sibling on a child, of uneducated parents, or of other such factors.

Self-rating of the student's own relation to the child is also excellent practice. The student must learn to appraise the difficulty, to determine how it can be lessened, and to evaluate what motivations contribute to the child's maladjustment. He must learn to anticipate resistance and to evaluate responses in such a way that he can plan to

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[20]Louis Barclay Murphy, "Teaching Procedures in Educational Psychology," Journal of Educational Psychology, 43 (January, 1952), pp. 16-22.

meet the needs and to measure the growth in abilities for the weeks, months, or a term ahead.

In order to give the student a chance to understand children, he must work with them. A year's study of an ordinary child is recommended. A month is devoted to learning basic approaches, concepts, and procedures of educational psychology, and the student is then requested to select a child to study for the rest of the year.

Rivlin[21] believes that this study of a child should be made on any normal child that is available, since students in this stage are not capable of dealing with problem cases. The child should not be a sister or brother of the student, or related to him. It is necessary, however, that the student should have some acquaintance with the child's family in order to establish contact and provide an easy "working relationship." A background report should be prepared as soon as feasible, describing the present state of development, the parents, siblings, and any other persons in the home, and giving any other pertinent factual information. The preliminary report is then followed by six reports made at intervals of a few weeks. These reports are based on the student's own experience with the child in relation to the topics discussed in class. The student should find opportunity to be alone with the child and to observe him at home with his family, at meal times, at bed time, at play with other children, on a trip or excursion, or at the movies or watching television, in order to obtain as clear as possible an impression of the child's reactions. The student must play the part of an outside observer, of a participant observer, and of a guide for the child. These reports,

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[21]Harry N. Rivlin, "The Teaching of Educational Psychology," Journal of Educational Psychology, 43 (January, 1952), pp. 23-30.

written in a notebook, should use only one leaf so that the teacher may make his comments on the opposite leaf. These comments will include questions, suggestions, and differences in opinion or interpretation. The student is supposed to make use of these comments in planning his next report. At the close of the first semester, a general summary is prepared dealing with such factors as development, emotional adjustment, social reactions, mental attainments, and the interrelationships among all of these. The student should then make an attempt to predict the problems that are apt to arise and offer suggestions that may be made to the parents of such a child (such suggestions being voiced only in the classroom and, of course, not to the parents).

During the second semester, when the reports will reflect the student's improved understanding of the child, greater attention can be given to estimating the child's mental capacities. It is, of course, necessary that the student should be in close and frequent contact with the child--play with him, observe him at school, at home, and away from home. The student must also learn how to interpret and appraise the results of tests.

The final report reviews the child's development during the year. The reports are discussed in class. Gradually the student learns to interpret class investigations in terms of the specific child and to realize the difference between observation and interpretation. Graduates refer to this child study "as one of the most rigid and time-consuming phases of the program--but also one of the most worthwhile and helpful activities."

William F. Bruce[22] suggests that moving pictures can be used as an aid in supplementing the student's own experience.

Mary Shirley[23] states that child study is best accomplished by numerous observations in different situations. An example of four types of observation of a girl of 7 years is cited, including a Rorschach test, a meal with other children, a period of housekeeping play, and an interview, all revealing the same personality picture and indicating a suppression of childish spontaneity, a desire to be like grown-ups and to be accepted by them on equal terms. It is emphasized that these four observations afford a better insight into the child's personality than numerous test scores.

When the letters[24] of inquiry concerning the research of methodology in the field of child psychology were sent to the directors of research in 51 colleges and universities,[25] one request was answered by the author of a text in the field. He wrote,

> I know of no such study. I insist on a fairly elaborate case study, (See my Child Psychology, Holt, 1952) and have many critical incidents and other evidence that it works. But no research.
>
> H. B. English

Anticipating that his publication might present new concepts of instructional method, his technique is reviewed in this section.

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[22]William F. Bruce, "Psychology Functioning in Education of Teachers," Journal of Educational Psychology, 43 (February, 1952), pp. 92-100.

[23]Mary Shirley, "Some Products of Child Psychology," in J. P. Guilford, Field Statistics (New York: Van Nostrand Sons, 1950), Chap. V, p. 75.

[24]Appendix B.

[25]Appendix B.

English[26] has taken as his central theme the project of making a case study of a child, giving minute instructions as to every phase of this procedure. He urges that this method be widely adopted. In the second chapter of his book and in special sections at the end of each major division, he offers detailed suggestions and numerous examples to facilitate observation and interpretation of child behavior. He emphasizes that most students have taken at least one course in psychology before reading this book. He feels that if there must be a choice between having the student read more studies of child behavior or having them spend time in actual observation, the latter will prove more valuable. Sections dealing with observation follow the discussion on children's emotions, motivation, physical status, intellectual development, social behavior, and personality. An "Appendix" describes the mechanics of case study, including a list of tests, a list of physical conditions, child behavior rating scales, parent behavior rating scales, and a reminder list of things to be suggested and cautions that must be observed. A sample case study is presented as well as instructions for administration of a case study program. The Child and Parent behavior scales were constructed by adaptation of material found in the rating scales of the Fels Research Institute, Yellow Springs, Ohio.

Under "Methods and Procedure," English describes how contacts with principals and teachers, home, and child can be achieved. Means of collecting second-hand information are discussed. He emphasizes that a simple diary observation will not suffice, since it permits no distinction between facts and their interpretation. Students are urged to present

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[26]Horace B. English, Child Psychology (New York: Henry Holt and Company, 1951).

the facts, adding their own interpretation in brackets. Concrete details should be supplied and vague statements avoided.

It has been found profitable, too, to select a limited area of conduct for observation at one time. The keeping of such records deepens the student's understanding of child psychology. The student is told how to prepare time samples, behavior check lists. Teachers in certain public schools in Ohio have prepared simple forms of "Who's Who in my Grade," followed by a brief description of certain personality types, with the question, "Who's like this?" for the pupils to fill in.

A three-step sociometric scale will give all needed information. The child is interviewed concerning 21 items; also, teachers must be interviewed.

The case study report should include the report to the instructor with a table of contents, the body of the report, and an appendix presenting the chronologic sequence of the various visits and trips, the amount of time spent on the visit, activities in general during such a visit, and the specific purpose of the activity together with serial numbers of field notes. The body of the report should contain a topical outline or biographic narrative or a combination of both with a resume as well as the report to the school and to the parents. Sample letters for these reports are included. Appreciation of cooperation and cautiously-worded suggestions to avoid implication of criticism should be included. A list of the usual tests for physical condition is given. A warning is issued that reports of teachers and parents are likely to be inexact.

Projective procedures include playing house, drawing, writing compositions, and conversations. English does not believe in tests. Suggentions of places to study the child are likewise included and directions for making the final report. There is also an extensive bibliography.

From the material surveyed in this section, the conclusion is apparent that there appears to be need for continuing research regarding the problems of college teaching, in general, and educational psychology in particular.

Educational Psychology in Teacher Education

As a professional course, educational psychology has had long and slow development. Crabb[27] declares that the first normal school in the United States, founded at Lexington, Massachusetts, in 1839, had among its offerings a subject called "Mental Philosophy" which was a course in psychology for teachers. He also states that the normal school at Oswego, New York, established in 1863, had, at the very outset, a course entitled "Child Study."

A course in either educational psychology or child study was to be found among the offerings of practically all teacher-training institutions in the United States during the 1890's.[28] At that time courses labeled "Child Study" were more frequently to be found than those designated "Educational Psychology." When Thorndike published his Educational Psychology in 1903, this trend was reversed, and the course called "Educational Psychology" became the fashion in teacher-training institutions. This pattern has persisted. At the present time "Child Psychology" is the vogue after a recent designation of the course as "Human Development."

The aims of the course, the contents of the course, methods of

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[27] A. L. Crabb, A Study in the Nomenclature and Mechanics Employed in Catalog Presentations of Courses in Education, (Contributions to Education, No. 21, George Peabody College for Teachers, 1926), p. 10.

[28] Hendrickson and Blair, op. cit., p. 348.

teaching, administration of the course, and the value of the course have been topics for investigation.

In 1932 Knight[29] investigated the teaching methods used in teaching educational psychology courses. His report showed that an assigned text plus lectures by the instructor constituted the basic method. However, he found a variety of devices used to supplement this method. He enumerates six of the chief ones and makes the remark that "there is evidently little observation of education at work in the schoolroom and little, if any, clinical experience provided."

Andress[30] stated in 1911 that "the ultimate goal of all teaching of psychology in normal schools must be child psychology, especially the psychology of children of school age." The same strong position was taken in 1942 by members of the Commission on Contributions of Psychology to Problems for Teaching, who wrote that "basic in any program for the preparation of teachers must be a thoroughly scientific, broad, and insightful understanding of development in childhood and adolescence.[31]

Most authorities at the present time would probably agree that the avowed purpose of the course in educational psychology is to provide prospective teachers with those psychological skills and insights which are necessary in successfully guiding the growth, learning, and adjustment of children.[32]

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[29]F. B. Knight, "Methods of Teaching Educational Psychology," Twentieth Yearbook, National Society of College Teachers of Education, (1932), pp. 58-61.

[30]O. M. Andress, "The Aims, Values, and Methods of Teaching Psychology in a Normal School," Journal of Educational Psychology, 2 (1911), pp. 541-554.

[31]American Association for Applied Psychology, "Report of the Committee on Contributions of Psychology to Problems of Preparation for Teaching," Journal Comparative Psychology, 6 (1942), pp. 165-166.

[32]Monroe, Encyclopedia of Educational Research, 1950 Edition, p. 349.

Since the time of Knight's study in 1932, a number of institutions have organized courses in psychology which attempt to give students experiences in observing and working with children. An example of this trend can be found in the outlines of certain colleges.

Canady[33] describes the way in which the instructor of the course in human development at West Virginia State College secures the approval of the members of the Parent-Teachers Association to permit the students of his class to study personally their boys and girls and to make case studies of them.[34] Canady's procedure brings the students into contact with children. This sort of directed experience is expanded and continued throughout the course with increasing emphasis upon responsibility and participation. The basic philosophy of the course is that human development is not so much a subject to be taught as something to be directly experienced, and, therefore, is largely organized about directed firsthand experiences. The first semester is given over primarily to a consideration of procedures for studying individuals. The first three weeks of this course are devoted to the study and discussion of a bibliography provided by the instructor. Each student is required to make at least one case study of a child and to present the formal report to the Human Development Class.

Another example of a college attempting to give experience with children in a course in child psychology is found at Syracuse University

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[33] H. G. Canady, How Students at West Virginia State College Are Brought into Contact with Children and How Skills Are Developed in Gathering Information about Children. American Council on Education, Commission on Teacher Education, Division of Child Development and Teacher Personnel (1943).

[34] Appendix A.

where each student spends one afternoon or evening a week in a social agency or youth organization in Syracuse working with adolescents.[35]

This research lends support to the theory that students of child psychology should have experiences with children but gives no measurement of the worth of such experiences.

Content of Courses in Educational Psychology

Numerous studies have been made of the content of the courses in educational psychology. These have provided data from questionnaires sent to teachers of the course asking them what topics they teach or should teach.[36, 37, 38, 39, 40] Watson summarized his questionnaire study of 1926[41] by stating that "the apparent concurrence of opinion would place major emphasis upon problems of emotion and personality adjustment, problems of original nature and heredity, and problems of general teaching method."

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[35] Monroe, Encyclopedia of Education, 1950 Edition, p. 351.

[36] N. B. Cuff, "What Should be Included in Educational Psychology?" Journal of Educational Psychology, 26 (1935), pp. 689-694.

[37] O. B. Douglas, "The Present Status of the Introductory Course in Educational Psychology in American Institutions of Learning," Journal of Educational Psychology, 16 (1925), pp. 396-408.

[38] F. H. Freeman, "Courses in Educational Psychology in Colleges, Universities, and Normal Schools," Eighth Yearbook, National Society of College Teachers of Education (Marshalltown, Iowa: Marshall Printing Company, 1918), pp. 43-61.

[39] O. E. Hertzberg, "The Opinion of a Teacher-Training Institution Concerning the Relative Value of Subject Matter in Educational Psychology to the Elementary School Teacher," Journal of Educational Psychology, 19 (1928), pp. 329-342.

[40] H. H. Remmers and F. B. Knight, "The Teaching of Educational Psychology in the United States," Journal of Educational Psychology, 13 (1922), pp. 399-407.

[41] G. B. Watson, "What Shall Be Taught in Educational Psychology?" Journal of Educational Psychology, 17 (1926), pp. 577-599.

An analysis[42] of thirteen textbooks in educational psychology which were published during the period 1940-1946 gave evidence that course content was still similar to that found in the earlier studies. The textbooks in the field vary considerably with respect to the emphasis given different topics. One of the textbooks devoted nearly half of its space to the psychology of the school subjects, such as arithmetic, reading, spelling, and social studies. Six gave no space to the topic. Some textbooks gave particular attention to the psychology of childhood and adolescence, whereas others only briefly treated these phases of growth. Two topics rather generally omitted from recent textbooks are statistics and schools of psychology. In summary, the authors state that the bulk of the material of the thirteen books, however, seems to fall under four major headings: growth and development, learning, personality adjustment, and evaluation.

In the opinion of Nelson and Blair, these four broad areas can probably be said to represent the basic content of the educational psychology course at the present time.

Crow and Crow[43] included the main points elaborated in seventeen textbooks in child psychology in their compilation. The texts[44] covered by them were published over a span of ten years, the earliest date of publication being 1942 and the most recent publication date 1952. Their study presented the essentials of a course in child psychology and attempted to represent the various schools of thought concerning growth and development. They traced, for each area of development, the general pattern of maturation in terms of the environmental influences that may

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[42] G. M. Blair and L. D. Nelson, Thirteen Textbooks in Educational Psychology, Published between 1940 and 1946 (University of Illinois, 1946, unpublished).

[43] Lester D. Crow and Alice Crow, Child Psychology, (New York: Barnes and Noble, Incorporated, 1953).

[44] Appendix C.

speed or retard normal growth. The many individual deviations that occur among children are given attention. The fourteen topics which the Crows retained in their content of the course became the titles of the areas of the Crow and Crow Examination in Child Psychology which the present study utilized for the initial and final testings. The topical areas included in the Crow research would probably be encompassed by the four major headings of the previous research by Blair and Nelson. However, the Crow recommendations seem more inclusive. They cover: (1) the science of child study which describes the modern approaches to child study; (2) the beginnings of life, influenced by the inheritance of anatomical and physical characteristics and behavior potentialities through the germ cells of the child's parents, and the effects upon the child of the influences by which he is surrounded; (3) the anatomical and physical development; (4) the development of motor abilities; (5) the development of the art of inter-communication, commonly referred to as the "language arts"; (6) mental development and intelligence; (7) the development of emotional behavior; (8) development of meaning and understanding, the power to understand and to put meaning into his life experiences; (9) creative play and the play of children; (10) the dynamics of children's behavior, which are translated into the child's attitudes, interests, and motives; (11) the development of social behavior; (12) character development and discipline, a culture in which certain moral standards and ethical principles are inculcated; (13) the development of personality; and (14) mental hygiene. The list of selected references for the Crow study is impressive.

Experiences with Children as a Teaching Technique

The desire to bring the student into contact with the child and his school and community loomed so large that, in 1945, teacher training experts voiced the opinion that a dichotomy existed between theory and practice, and that much too little was being done in a functional way of teaching students to study children. The American Association of Colleges for Teacher Education began a program designed to lessen the dichotomy. A committee of three met and established a set of principles for student teaching. Following this conference, another group of thirty-five or forty members met and reviewed critically the suggested principles of student teaching, developed a rather extensive questionnaire which asked for data from all member institutions of the organization and fifty liberal arts colleges having teacher education, and described issues and problems in the area of student teaching. The suggestions of the committees were published in a brochure entitled School and Community Laboratory Experiences in Teacher Education.[45] The brochure proposed a program which furnished professional laboratory experiences with children, presented as items clustered around nine major concepts called standards.

For many years, the American Association of Colleges for Teacher Education has used this series of standards as the basis for its accrediting procedures. The brochure defines in specific terms the

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[45]The American Association of Colleges for Teacher Education, School and Community Laboratory Experiences in Teacher Education, (Oneonta: 11 Elm Street, 1948).

characteristics of desirable goals in teacher education. Progress toward the kind of program envisioned by the American Association of Colleges for Teacher Education Standards has become a major concern of many teacher-preparing institutions.

McGeoch[46] answered two questions in her study of 1953 concerning the implementation of Standard VI of the American Association of Colleges for Teacher Education. (1) What is a good program of professional laboratory experiences for students preparing to be teachers? and (2) What are feasible and effective ways of working toward such a program? McGeoch tells the ways in which three teacher education institutions might develop their direct-experience provisions in terms of qualitative criteria formulated by the American Association of Colleges for Teacher Education. Emphasized in the accounts of the three programs are the processes of development over a five-year period and before and after evaluations of the program.

McGeoch writes a hypothetical story. The 1953 descriptions are not accurate portrayals of any existing programs. However, an actual institution served as the basis of the description in each case. The year 1958 was chosen for the projected programs because five years were considered long enough to make progress toward a desirable program. A detailed description of the college as it was is given and then the changes which have taken place and the factors influential in promoting the changes are considered. The first improvement was a program of curriculum development with several distinctive features. First, it provided for differentiation between the elementary and secondary curricula at two points only--in the methods courses in the junior year

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[46]Dorothy M. McGeoch, Direct Experiences in Teacher Education, A Story of Three Programs, (New York: Bureau of Publications, Teachers College, Columbia University, 1953).

and in student teaching. A second distinctive feature of the new curriculum was that the required courses of each year were taught by a team of individuals who worked with a coordinator to integrate the content of the various areas of study. A third important characteristic of the new program was the provision of a framework within which an educational sequence could be developed. The revision provided many direct experiences with children, even before the senior year.

Variety was added to the descriptions by presenting diaries, letters, and narratives, all imaginatively reconstructed from factual material. The report of progress in implementing Standard VI of the American Association of Colleges for Teacher Education was presented for a panel discussion.

Nagle[47] evaluated student growth during an internship in student teaching in the College of Education, University of Florida, at Gainesville during the fall of 1951. There were sixty-five students involved. In no case was the intern of less than senior standing in the university; others were of graduate standing. The series of experiences provided the intern were divided into three phases: the initial, an on-campus phase lasting one week for elementary education interns, and three weeks for secondary education interns; the second, an off-campus phase lasting fourteen weeks for elementary interns and ten weeks for secondary interns; and the third or final phase, an on-campus phase of the same length as the initial phase. Each of these phases represented different kinds of experiences for the intern. The activities in which the student engaged, the materials used as a part of the experiences, and the location of the experiences usually differed between the adjacent phases of the sequence

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[47]L. Marshall Nagle, Jr., An Evaluation of Student Growth During An Internship. A Dissertation, The University of Florida, August, 1952.

composing the internship. It was during the first week of the initial phase that the interns participated in the testing program that gathered the initial test data for his study. The intern worked with two groups of fellow interns. These two groups were designated (1) general methods group and (2) subject-matter group. The intern took part in seminar sessions for general methods which lasted two hours each day, Monday through Friday. As a member of the subject-matter group, the intern took part in group study sessions lasting two more hours, Monday through Friday, as in the general methods group. He visited the school where he was to serve his internship.

The laboratory phase of the internship program was composed of ten weeks of experience in selected public schools of Florida. The last three weeks were spent on campus by the groups of interns. During the last week of the third phase of the internship, the final test data for the Minnesota Multiphasic Personality Inventory, the Professional Attitudes Measure, and the Strong Vocational Interest Blank were treated statistically and the results obtained at the end of the internship indicated that score changes in the areas of the scales of the test were in the desired direction. None of the individual scales on the Minnesota Multiphasic Personality Inventory revealed a change in the mean scores that was significant. From the results obtained with the Strong Vocational Interest Blank, it appeared that no significant growth was achieved by the internship group during the period of the internship in the area of vocational interest level. Results obtained on the Professional Attitudes Measure scale of attitude toward School-Community Relationships revealed significant growth by the internship group.

The curriculum offered at Wayne University[48] for the education of teachers revolves around a core of practical experiences with children which begin early in the education of the student and continue through the four years. A shaded graph in the Bulletin[49] shows that in the third, fourth, and fifth years, three types of education are pursued by the student: a continuation of his general liberal education, an extension of knowledge and skill in his special field, and the professional preparation for teaching. The third phase of the program is centered around experiences with children which begin in the form of supervised observation in the first semester of the third year and continue as student teaching for three additional semesters, with increasing responsibility as the student grows and develops. Closely related to the student teaching experience are courses in child growth and development, methods of teaching, and other related professional courses. Course descriptions in the catalogue for psychology of childhood and adolescence carry the lines: "Observations of children individually and in groups" or "Additional material for group and class discussion furnished by observations of children individually and in groups."[50] The graded steps by which a student teacher gains full responsibility of his class is shown in the chart from the curricular pattern of Wayne University.[51]

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[48] Wayne University, Bulletin, The College of Education, 1954-1955, pp. 55, 96, 102.

[49] Ibid., p. 96.

[50] Ibid., p. 170

[51] Ibid., p. 101.

The whole training course revolves around a core of practical experiences with children which begin the very first semester and continue throughout the whole four years.

Practically unlimited resources for out-of-school group leadership and for student teaching in school are available in Detroit and suburban communities; classroom situations are typical of public schools in class size and unselected character of children. Supervisors of student teaching to whom students are assigned are selected by the College in co-operation with school authorities.

Each succeeding semester of student teaching imposes greater responsibilities upon the student; in the final assignment the student assumes complete control of the room.

1st and 2nd Years	3rd Year First Semester	3rd Year Second Semester	4th Year First Semester	4th Year Second Semester
A minimum of 100 clock hours of service in the leadership of young children in social, recreational, religious, and character building activities outside of school directed by social agencies, churches, summer camps, etc. under the supervision of trained workers. Over 250 agencies co-operate with the University in this program. College courses in social science are correlated with the work of other social institutions in the community.	Directed observation in Detroit schools paralelled by readings, discussions, interpretations. Individual case studies of children in connection with child psychology courses.	Student teaching one fourth day throughout semester; critic in room all of time; student assumes full responsibility as soon as he is able. Student meets daily with College instructor for discussion of classroom procedures and methods of teaching various subjects.	Full teaching responsibility for one half of day throughout semester; critic in room half of time. Methods of teaching school subjects, etc.	All day teaching in two different types of city schools for a period totaling six weeks; regular room teacher relieved for other assignments; student supervised by College and principal.

Low[52] expressed her ideas with regard to bringing the prospective teacher into the community in relation to the child. This brochure is a laboratory handbook for prospective teachers. The eight chapters of the publication present such topics as the place of laboratory experience in a professional program, laboratory opportunities in the community agencies of Madison, studying the child through laboratory activities, studying community backgrounds, essentials of group leadership, directions for participants in the program, and useful techniques for gathering and recording data.

The purpose of the publication is to help students in the School of Education of the University of Wisconsin gain maximum experience from the school and community activities in which they may be engaged. It is a compilation of information about schools and agencies in the city of Madison. The brochure further describes the types of programs in which participation is possible.

In Chapter 5, page 59, a useful summary of suggestions for group leaders is given. In Chapter 7, forms are suggested for such activities as pupil adjustment inventory, autobiography, get-acquainted questionnaire, and use of leisure time. Much information designed to enrich the background and understanding of the respective teacher is presented in this handbook.

An example of a state department of public instruction,[53] recommending

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[52]Camilla M. Low, The Child and the Community (Madison, Wisconsin: Brown's Book Shop, Incorporated, 1953), Revised.

[53]State Department of Public Instruction, Madison, Wisconsin. Reported in the Journal Understanding the Child, Volume 17-19, 1948-1950 (June, 1948), pp. 80-81.

a program of instruction which includes experiences with children, is offered below:

Desirable Experiences for Prospective Teachers

We believe that teacher-training institutions should provide the following types of experiences for prospective teachers:

1. Experience in studying individual children and in selecting suitable learning activities for them.

2. Experiences in studying and utilizing the needs and resources of a local community for curricular enrichment.

3. Experience in teaching fundamental skills in relationship to children's problems of living.

4. Experience in making and in utilizing resource units for the building of teaching unit appropriate to a specific group of children.

5. Experiences in working with children in extra-curricular activities or out-of-school groups.

6. Experiences with parent conferences and home visits.

7. Experiences in using confidential information and in developing pupil staff and community relationships appropriate to the highest professional standards.

8. Individual experience in carrying the full teaching responsibility of a child-centered program through a series of entire days.

Current Research in the Field

Experimental Studies in Progress in Centers of Research.

In order to survey the field of relevant literature more competently and adequately, and to bring the research to the present time, letters of inquiry were sent to the directors of research in fifty-one colleges and universities, chosen from The College Blue Book.[54] These were all

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[54]Huber Williams Hurt and Marion E. Abbott, The College Blue Book (Yonkers-on-Hudson, New York: Christian E. Burckel), Sixth Edition, 1950.

institutions[55] which grant higher degrees except one. This exception was added to the list because of its reputation in the field of child study. This letter[56] enlisted the help of the several resident research directors in ascertaining whether research, using direct experiences with children as a method of teaching child psychology, had been done or was being done in the graduate school.

The same letter[57] was sent to associations for child study; and, if the director of research mentioned any individual or agency as a likely source of information on this particular problem, a copy of the inquiry was sent to that address. All of these suggested research agents replied, making forty-nine respondents.

Some of these responses came from distinguished writers and well-known authors of child psychology texts, and all the respondents were eminent. An examination of the contents of the replies establishes the fact that no systematic research has been done in the institutions responding to the letter, according to the explanation of the problem as given in the letter.

Many of the conductors of the children's work infer that directed experience is valuable and presume that it is of considerable worth. They express the modern assumption that child practicums are desirable and even necessary concomitants of courses in child psychology and development and try to use direct observation of children in conjunction with their courses where relevant; but to the best of the correspondents'

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[55] Appendix B.

[56] Appendix B.

[57] Appendix B.

knowledge, this is a matter of assumption, faith, and personal experience rather than a conclusion soundly based on research evidence.

There has been no attempt to evaluate the worth of experiences with children in terms of growth of the student in knowledge and understandings gained while taking a course in child psychology. In many instances, these persons expressed intense interest in the outcome of the present research.

In many instances, when the respondent reported that he had no study in progress nor did he know of any, he added interesting observations. One expressed his opinion when he wrote, "I consider this a very important field and would appreciate knowing more about your procedure." Another said, "In my opinion, I believe that some type of actual contact with children and child problems enhances the teaching of courses in child psychology."

The research director in one large university asked the instructor of the course in child psychology to reply to the inquiry in regard to the present problem. She answered that, in the service course in psychology for teachers in training, students are expected either to observe children at various age levels or to work intensively with children at a particular age level, but that this observation had never been made mandatory because the students themselves almost universally feel that this would be of great help.

One leader of longitudinal studies wrote that in their center of research they were primarily interested in the children themselves and their development and adjustment, and that their college students have many contacts with the children but that they were not concerned with evaluating this experience.

Stillman[58] had students enrolled in a Home Economics Child Development course observe nursery school pupils to determine if attitudes and knowledges are influenced by directed observation.

It is not clear by what tests the groups were equated nor is the unit of comparison given for the psychological rating. The statement is made, however, that the groups were approximately equated in sex, age, number, psychological rating, and classification in school. Thirty-one students composed the experimental groups; thirty-three made up the control. Neither the author of the attitude test nor the author of the knowledge test is disclosed, but the remainder of the study is excellently described. Each lesson was carefully planned with a study guide made out for the instructor's use. The study guide contained subject matter material to be covered and special points to be emphasized. From behind one-way screens, the home life majors watched the children.

The following conclusions were among those reached by Stillman:

1. The group which observed in nursery school tended to be more homogeneous in the attitude toward fear as a means of control and toward pre-school education.

2. In the situation which was studied, observation in the nursery school seems to make no significant difference in the change of observed attitudes from the beginning to the end of the study.

3. There was no significant difference between the groups in the amount of change of attitudes.

4. There is little, if any, relationship between psychological rating and attitude changes in this study.

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[58]Helen Vinson Stillman, Knowledge and Attitude Changes of College Students in a Home Economics Child Development Course Influenced by Directed Observation in the Nursery School, (Oklahoma A. and M. College, Master's Thesis, August, 1940).

5. Observation in the nursery school seems to have the greatest influence in changing attitudes toward self-reliance and toward use of corporal punishment as an ineffective means of control.

Methods Used in Teaching the Course at the Present Time.

To discover certain background information about the teaching of the course in child psychology at the present time, but more especially to ascertain by what methods it is being taught and how many experiences with children are being provided, an informal analysis was made of the situation using a sampling technique.

A letter[59] with an enclosed postal card was mailed to the state superintendent of public instruction in every state in the United States. He was requested to write on the card the name and location of the institution in his state which trains the largest number of teachers.

Forty-five state officers[60] of education responded to the request. Using the information which was thus furnished, a letter[61] with a questionnaire[62] was sent to the head or chairman of the department of psychology of each institution named.

Thirty-nine professors[63] of psychology, or persons named by the dean of the department to answer the questionnaire, responded. Tabulations were made of the results and the frequency of response is shown in Table I.

To determine the offerings in child psychology in the colleges the first item asked, "How many courses in child psychology are offered in

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[59] Appendix B.

[60] Appendix B.

[61] Appendix B.

[62] Appendix B.

[63] Appendix B.

TABLE I

RESULTS OF THE QUESTIONNAIRES SENT
TO HEADS OF DEPARTMENTS OF PSYCHOLOGY
IN INSTITUTIONS WHICH TRAINED THE MOST TEACHERS IN 1954*

Questions and Responses

1. How many courses in child psychology do you offer?
   - One Course 12
   - Two Courses. 16
   - Three Courses. 3
   - More Courses 8

2. At what level are students permitted to take child psychology?
   - Freshman 4
   - Sophomore. 25
   - Junior 24
   - Senior 17
   - Fifth Year 11

3. Are there pre-requisites?
   - Yes. 31
   - No 8

4. By what methods is the course taught?
   - Lecture. 32
   - Problem Approach 18
   - Observation. 25
   - Participation. 4
   - Discussion 5
   - Case Study 1

5. Are children handled and studied by firsthand methods?
   - Yes. 26
   - No 12
   - Just observed. 1

6. Are children studied by films?
   - Yes. 37
   - No 2

7. How are children observed?
   - Gauze Igloo. 0
   - One way Screen 14
   - Open Floor 21
   - None 4

8. How many experiences with children are provided?
   - Many 12
   - Few. 7
   - Some 10
   - None 6

*There were thirty-nine questionnaires returned.

TABLE I (Concluded)

RESULTS OF THE QUESTIONNAIRES SENT
TO HEADS OF DEPARTMENTS OF PSYCHOLOGY
IN INSTITUTIONS WHICH TRAINED THE MOST TEACHERS IN 1954

Questions and Responses	
9. How are the observations with children directed?	
Oral	23
Observation Manual	10
Guide	1
Sheets	5
10. In what form does the student record his observations?	
Log	14
Reports	2
Observation Manual	6
Cards	3
None	8
Theme	2
Essay	2
11. What content receives major emphasis?	
Mental Hygiene	18
Learning	22
Growth and Development	38
Psychology of School Subjects	6

your college?" Twelve answered one course, sixteen replied two courses, and three had three courses. One large western university offered five undergraduate courses and two graduate courses in child psychology, making seven courses in all. Yale University and Iowa State Teachers College at Cedar Falls each had a course in child psychology which is required of all college students.

Four schools permitted students as early as the freshman year to enroll in child psychology. The sophomore year led in being the level at which most colleges enrolled students in the study of child life. The large tallies for this item may be misunderstood. The respondent

checked the lowest year in which a student could choose child psychology and then he checked the level of later years.

Thirty-one colleges were of the opinion that general psychology should be taken before child psychology. Ohio State requires five hours of psychology for the freshman course and twice that much, ten hours, for the child psychology course offered at the junior level.

The methodology of today's professors is varied but there is a strong indication in the tallies that the lecture method has the highest frequency of usage. The observation of children as a method of instruction follows closely with six fewer frequencies. Other methods used are named in a descending order, the problem solving method with eighteen frequencies; discussion with five scores; participation, four; and case study materials, one.

Twenty-six colleges actually permit their psychology students to handle and study the children by firsthand methods. One wrote, "Observation only," at this place on his questionnaire, but twelve said that they furnished no firsthand experiences with the course.

Apparently, the most popular technique used in teaching child psychology was the use of the film. Thirty-seven of the thirty-nine institutions concerned studied children by the use of films.

No person checked Arnold Gesell's gauze igloo as a means by which children were observed. The open-floor accommodation where demonstrator, subjects, and observers are all on the same floor level was used by twenty-one of the teachers. Fourteen of those replying to the questionnaire observed through the one-way screen but one teacher in a large state university declared that he only used the one-way screen in play-therapy course.

Probably because of the indefiniteness of the item, the frequencies

are more nearly equated on the eighth item and many professors wrote in a number which denoted how many experiences with children were provided in his school. The range was from six to ten experiences.

The student was directed orally in twenty-three departments, by observation manual nine times, and by sheets co-operatively made with teachers from other fields, five times. His observations were more often recorded in a log than in an observational manual, since thirteen respondents checked that record first.

The last item deals with the content of the course. The opinions offered were homogeneous in asserting that growth and development received the major emphasis in their courses but that learning and mental hygiene were not neglected by any means. Several wrote in this blank, "the total child which includes all, using a developmental approach."

The professors indicated in their responses that the child development courses in Home Life incorporated more actual experience with children than did the psychology department. A head of the department of psychology wrote, "Home Life has a much more ambitious program in Child Study than we have. There are four or five courses in Home Life. In one of these, direct study of children is a part of the course."

Their comments indicated that the instructional plan was very different from the undergraduate courses and those for the fifth year student. The lecture and discussion methods prevail here. The indication was that the graduate course shows fewer films and gives fewer experiences with children. The graduate courses are largely lecture, discussion, and "report" classes.

In their remarks, the deans voiced some dissatisfaction with their child psychology classes. Among the criticisms offered voluntarily by

the dean of a large teachers college was, "Our course is not as strong as it should be. No foundational course precedes it. It does not carry as much course credit as we think such a course should carry." Another observation from a dean in the Black Hills was, "I do feel that we are too far away from the children themselves - BUT - and it is a big one. Where would we get in a twelve week course if we tried to make each period either one of direct observation or experimentation? There is a real problem here in teacher training and I don't know the answer as well as I once thought I did."

A summary of the main points of the questionnaire shows that most of the colleges which train the largest numbers of teachers offer two courses in child psychology at the sophomore or junior level with general psychology as a pre-requisite. The course is more often taught by the lecture method with some observation of children followed by discussion. The content covers the "whole child" and entries are made rather informally in a record which is sketchy.

Eighty-two per cent of the professors teach the child psychology course more often by the lecture method. Sixty-three per cent of the respondents use observation of children in conjunction with other methods. More than one-half of the observation is done by the open-floor, since fifty-four per cent of the teachers report that the observers are on the floor level with the children whom they are studying. There are many ways of recording the observations, but the log is used by thirty-five per cent of the professors. Twenty per cent had no systematic manner of recording the experiences. Mental hygiene, learning, and growth and development received the major emphasis in the content of the child psychology course. The totals exceed the thirty-nine who responded because many of the professors checked some parts of an item more than

one time. Ninety-seven per cent emphasized growth and development. The second largest group, fifty-six per cent, emphasized the principles of learning; and forty-nine per cent emphasized mental hygiene.

A study made by Blair and Colyer,[64] based on an examination of the catalogues of fifty representative American colleges and universities, showed that sixty per cent of the colleges listed had pre-requisites for child psychology. The current survey, based on the questionnaire, indicated that eighty per cent of the colleges responding recommended pre-requisites. The Blair study showed that the course was usually offered at the junior level, whereas the present study shows a tendency to place the course at the sophomore level. In fact, in the academic year, 1954-1955, four colleges permitted freshmen to enrol in the course.

Summary of Related Literature

From the survey of the literature, the conclusion may be drawn that no great effort has been made to determine the effectiveness of measuring the growth in college youth after using particular teaching procedures. While there has been some research at the college level, most of the research in this area has been done in similar fields, using traditional methods of teaching. The results of experimental studies have indicated that lectures, demonstrations, recitations, and problems are all effective.

The writer was unable to discover any research at the college level which deals with learning through directed experiences, although considerable attention has been given in educational literature to the relationship between firsthand experience and school learning in the elementary

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[64] G. M. Blair and Katherine Colyer, Psychology Courses for Teachers as Revealed by the Catalogues of Fifty Representative American Universities, (University of Illinois, 1947, unpublished). Walter S. Monroe, Editor, Encyclopedia of Educational Research, 1950 Edition, p. 349.

and secondary schools. No one has investigated the value of the workbook as a teaching device. No one has adequately investigated the effective tone, or degree, to which the learner likes or dislikes materials. No one has studied the motivational significance of "readiness."

The complexity of the teaching-learning process makes difficult the attempt to compare methods of teaching. Patterns of instruction are difficult to classify because in different situations patterns are likely to take peculiar trends. Studies reporting dependable findings are not numerous. As a result, it is difficult to synthesize the evidence on the relative merits of general methods of teaching. Research does not reveal that there is any best pattern of instruction for every teacher in every situation.[65]

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[65] Lindley Stiles, Stephen Corey, Walter S. Monroe, "Methods of Teaching," Encyclopedia of Educational Research, Walter S. Monroe, Editor, 1950 Edition (New York: The MacMillan Company, 1950), p. 750.

CHAPTER III

PLAN OF THE INVESTIGATION

Need for the Investigation

Careful study of the research and related literature summary in Chapter II revealed that, while directed experiences with children are advocated as desirable for students engaged in the study of child psychology, no systematic directed experiences have been established and no objective evaluation of the effects of such experiences has been made. Therefore, a need exists for such a study. This study attempts to ascertain the effects of systematic directed experiences with children on the knowledges and understandings of students in a college class in child psychology when such knowledges and understandings are measured by the Crow and Crow Examination in Child Psychology (1953 Edition).[1]

Locale of the Study

The type of school selected as a site for conducting an experiment in methods has an important bearing on the ease and accuracy of administering the experimental design. More important, perhaps, is the effect of the locale on the extent the findings can be generalized upon for other learning situations.[2] This section contains a description of the school selected, the subject matter used as instructional material,

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[1]Crow and Crow, op. cit., pp. 215-255.

[2]Carl R. Carlson, op. cit., p. 37.

the controls, and the facilities available to launch and develop the investigation.

The study was conducted in the department of psychology at Southeastern State College, Durant, Oklahoma. The scope of instruction in the course, as briefly described in the college bulletin under psychology, is as follows:

> 323. Psychology of Childhood and Adolescence.[3] Normal physical, mental, social, and emotional development of the individual through youth to maturity. Credit: three hours.

In the course, the student is introduced to the science of child study,[4] which deals with (1) the stages of growth and maturation, (2) the effects of environmental influences upon individual patterns of development, and (3) the psychological and social interactions between a child and the other members of the society in which he is born and reared.

The subject matter is particularly appropriate for this study because of the variety and range of learning outcomes which are encompassed. In other words, there is a definite body of information, vocabulary and definitions, and general principles which are to be learned. There is also an opportunity to pose problem situations in which the content can be applied.

The facilities offered by the college where children could be studied include an on-campus school known as Russell Elementary School and a public school system with which the college has affiliation.

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[3] Southeastern State College Bulletin (Durant, Oklahoma, 1954-1955), p. 69.

[4] Crow and Crow, op. cit., p. 1.

General Plan of the Investigation

Over a two-semester period, a total of 161 college students of Southeastern State College, Durant, Oklahoma, were participants in the investigation. One hundred formed an experimental group; sixty-one formed a control group.

The Experimental Group.

During each semester every participant of the experimental group:

1. observed at least six lessons taught by public school teachers of Durant (Observations were arranged by the students concerned. Mutually acceptable days, times, and curriculum areas were worked out by the director of student teaching and the experimenter.)

2. noted on observation sheets (a) principles of child psychology which he believed he saw illustrated, (b) materials which he believed were of value for discussion with the entire group, and (c) evaluations of the experience in the light of the psychology he had read

3. made entries in his log of the results of his observations

4. took part in a series of discussions with his group for the purpose of sharing reactions to the observations

5. saw films which were directly or indirectly related to the instruction

6. summarized the major theme of the films for his log

7. visited community agencies where children were assembled and discussed, with the supervisor of the child or adolescent group, techniques and materials which were used and the principles of child development which were operating

8. weighed and measured a group of boys and girls

9. watched directed and free-play recreation activities

Attempts were made to provide experiences with children of differing abilities and maturity levels and socio-economic backgrounds.

Many of the contacts with the children and youth were guided by furnishing the subjects with observation blanks.[5]

Total Group.

During each semester all students involved in both the experimental and the control groups:

1. took standardized tests and informal objective tests
2. read a textbook and its related references
3. kept a workbook
4. made oral and written reports
5. never attended class for more clock hours than were required by the regulation of the college for a three-hour credit (For the experimental group, observations were substituted for class recitation periods. When the members of the experimental group visited the vacation Bible school, entertained the children at the Christmas party, or had any directed observation or contact with the children, they did not meet the organized class periods as regularly scheduled.)

Control Factors.

Control factors for the groups were:

1. the same teacher taught all groups
2. the number of recitations per week were identical
3. the textbook, the workbook, the assignments, and the tests were the same
4. all groups had opportunities to enter into class discussions

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[5]Appendix E.

5. all groups made oral and written reports

6. the initial status of the subjects was comparable when measured on mental aptitude (A C E), on reading skills (S R A), and on their previous knowledge of child psychology (Crow and Crow Examination in Child Psychology)

Experimental Factors.

The experimental factors for the groups were:

1. firsthand experiences with children and youth by observation, participation, and guided and directed contacts.

2. viewing of films which furnished vicarious experiential backgrounds.

3. preparation of logs and observation sheets.

Subjects for the Study

The study was carried out with college students of junior and senior standing as subjects. Four groups were used. The experimental groups consisted of forty students enrolled in Child Psychology 323 at Southeastern State College in the summer of 1954 and sixty students enrolled in the course in the fall of 1954-1955. The control groups consisted of fifteen students enrolled in Child Psychology 323 in the summer of 1954 and forty-six students enrolled in the course in the fall semester of 1954-1955 at the same college.

In summary, there were two experimental groups which provided one hundred subjects for comparison with sixty-one control subjects.

The 161 students comprising the personnel for the experimentation were also registered in the course, Child Psychology 323, for three hours of credit.

These groups were not matched. They were not selected at random.

Every student assigned to the course for two semesters was a part of the experiment; however, the groups were comparable, as explained on page 69.

Since the situation was not such that the matching of groups was feasible prior to the assignment of the subjects to the experimental condition, the data for the groups were treated statistically by using the t statistic described by Lindquist[6] and Snedecor[7] for small groups with different numbers of individuals to determine comparability. This technique is similar to that used by Bond[8] in 1949 and Nagle[9] in 1952.

The hours at which the classes were scheduled determined whether the group would be experimental or control. The availability of the elementary school where the children were located controlled the selection.

The Testing Program

To ascertain the general ability of the subjects, two tests were administered to two groups at the beginning of the summer semester of the school year 1954: the American Council on Education Psychological Examination, 1954 College Edition; and the Science Research Association Reading Record.

The same tests were administered early in the first semester of the school year 1954-1955 to the other two groups. In addition, the Crow and Crow Examination in Child Psychology, 1953, was administered to all groups during the first week of each term.

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[6]E. F. Lindquist, Statistical Analysis in Educational Research (Boston: Houghton Mifflin Company, 1940), pp. 56-59.

[7]George W. Snedecor, Statistical Methods (Ames, Iowa: The State College Press, 1946), p. 80.

[8]James G. Bond, The Influence of Remedial Training Upon Scores Obtained on a Personality Test, Master's Thesis (Bowling Green, Ohio: Bowling Green State University, 1949).

[9]L. Marshall Nagle, Jr., op. cit.

After a period of eight weeks for the summer groups and seventeen weeks for the fall groups, during which time the experimental group had directed experiences with children and the control group had no directed experiences with children, the Crow and Crow Examination in Child Psychology was again administered to all groups.

The difference between the initial scores and the final scores on the Crow and Crow examination was considered the measure of the effect of the experimental factor.

Unit or periodical tests were given during each semester to make it possible to ascertain whether or not the results consistently favored either group.

The following significances were determined for the Crow and Crow Examination:

1. The significance of the difference between the means of the raw scores of the control and experimental groups at the initial testing (t for independent measures).

2. The significance of the difference between the means of the raw scores of the control and experimental groups at the final testing (t for independent measure).

3. The significance of the difference between the means of the raw scores of the control group at the initial testing and the raw scores of the control groups at the final testing (t for related measures).

4. The significance of the difference between the means of the raw scores of the experimental group at the initial testing and the raw scores of the experimental group at the final testing (t for related measures).

These significances were interpreted to determine the relative effect

of the directed experiences with children, as compared to no directed experiences with children, on the scores on the final test.

Materials Used in the Experiment

The American Council on Education Psychological Examination 1954 College Edition.[10]

The purpose of the American Council on Education Psychological Examination is to appraise what has been called scholastic aptitude or general intelligence, with special reference to the requirements of most college curricula. Different tests have been used for this purpose. This test gives a quantitative score, a linguistic score, and a total score. For the purpose of this study, however, only the total score was considered. The statistical treatment necessary for the comparison of the groups was based on the total raw score as yielded from the A C E. This test was machine scored.

Science Research Associates Reading Record,[11] by Guy T. Buswell, the University of California.

The reading record measures ten reading skills: rate, general comprehension, paragraph meaning, directory reading, map-table graph reading, advertisement reading, index usage, technical vocabulary, sentence meaning, and general vocabulary. This test was hand scored.

Crow and Crow Examination in Child Psychology,[12] 1953 Edition.

This examination totals more than 700 questions which focus upon and evaluate the main points elaborated in seventeen leading textbooks in

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[10] American Council on Education, Manual of Instructions (Princeton: Cooperative Test Division, Educational Testing Service, 1954).

[11] Science Research Associates 1954 Catalog (Chicago), p. 34.

[12] Crow and Crow, op. cit., pp. 215-255.

child psychology. True-false and multiple-choice questions and matching exercises are provided. There is also a comprehensive examination consisting of general or over-all questions, enabling the student to make a thorough survey of the fields as a whole. The authors furnished the answers. Mimeographed copies of the examination were used. There were 428 true-false questions, 138 multiple-choice questions, 29 matching exercises, and a comprehensive examination which carried 100 true-false and 50 multiple-choice items, making a total of 745 questions.

The original test was repeated at the ends of the semesters in which the subjects were experimentally involved. The subjects were not informed that the examination which was used for the initial test would be the same used for the final test. It was such a lengthy examination, without identifying earmarks, that most of the subjects did not remember it. This test was hand scored.

Unit Tests.

Periodical unit tests were given to ascertain whether or not the results consistently favored either group. The unit tests were made to measure knowledge of the subject matter. The unit tests were made by Professor Guy A. Lackey of Oklahoma Agricultural and Mechanical College and the experimenter. Mr. Lackey's test, composed of two sections of multiple-choice statements, covered the text. The unit tests on endocrines and nutrition and their relation to growth were made by the author of this study. These were objective examinations and were used to measure mastery of subject matter. These tests were hand scored.

Experimental Procedure

All four groups were taught by the experimenter in exactly the same way except that the experimental groups had directed experiences with

children while the control groups did not. The time factor was held constant.

The experimental groups observed children being taught by critic teachers and student teachers in the public elementary schools of Durant. The students of the experimental groups visited a vacation Bible school three times, as a group and in sections. In small groups they attended Boy Scout meetings in Durant and Atoka, Oklahoma, and Sherman and Denison, Texas. Thirty students of the experimental group visited the Girl Scouts in Durant at the Camp Fire Lodge and the Horizon Club in Atoka at their meeting places. Some of the members went to Teen Town in Denison. The fall experimental group gave a Christmas party for the fourth, fifth, and sixth grades of Russell Elementary School, Durant, Oklahoma, and served refreshments.

Two members of the experimental group took Sunday School classes during the experiment; two members took music pupils for the duration of the experiment; and two members of the experimental groups sponsored Little League baseball teams for three weeks. One member went to observe the boys at the State Training School at Stringtown.

Films were shown to the experimental group.

All groups used a class textbook,[13] all groups kept a workbook,[14] all groups gave reports, and all groups took the same tests and examinations.

The experimental group had observation guides and kept logs. They discussed the films and the experiences with the children.

The subjects were never told that they were involved in experimentation

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[13] Breckenridge and Vincent, Child Development (Philadelphia: Sanders, 1949).

[14] George E. Schlesser, A Workbook in Child and Adolescent Psychology (Syracuse: Syracuse University Press, 1948 Edition).

since it was felt that the knowledge of this would be motivation in itself. The experimenter wanted the experiences with children to be the motivating force.

Summary of the Investigation

The experimental design of this study was fashioned after Snedecor[15] and Lindquist,[16] and all formulas for the statistics were based on Garrett.[17]

The design of the experiment was as follows:

Summer, 1954

Control group, 15 members, Senior College Level

Experimental group, 40 members, Senior College Level

All enrolled in Child Psychology 323 at Southeastern in Durant, Oklahoma

Full semester

Design II[18]

Experimental Factor: An Instructional Technique

Fall, 1954-1955

Control group, 46 members, Senior College Level

Experimental group, 60 members, Senior College Level

All enrolled in Child Psychology 323 at Southeastern in Durant, Oklahoma

Full semester

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[15]George W. Snedecor, op. cit., Chapters 3 and 8.

[16]E. F. Lindquist, op. cit., p. 81.

[17]Henry E. Garrett, Statistics in Psychological Education (New York: Longmans, Green, and Company, 1953, Fourth Edition), pp. 190-194.

[18]E. F. Lindquist, op. cit., p. 81.

Design II[19]

Experimental Factor: Same as above

The same textual materials were used for both the lecture-discussion-with-children method and the lecture-discussion-without-children method groups; the same workbooks were completed; the same oral and written reports were made; and the same examinations were administered. The writer served as instructor in all classes comprising the experimental and control groups. The classes were part of the regular offering at Southeastern, Durant, and students selected them in a manner no different from that in which they might enroll for any other class. The classes were not identified as experimental classes; the instructor did not announce to her students that they were subjects in an experiment; and the instructor felt no prejudices for either method. In order to remain objective, the measuring instrument (Crow and Crow) was not scored until after the end of the experiment.

Size of the Groups.

Snedecor[20] speaks of treating groups with different number of individuals when he declares:

> There is no necessity that the two groups be of the same size. In much experimentation it is inconvenient to provide equal numbers of individuals. . . . This may not change the statistical theory and causes only a slight alteration in the method of making the comparison.
>
> The process of testing outlined above for groups of different sizes may be condensed into this t formula.

Student Material.

General intelligence, previous achievement in the field of

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[19]Ibid., p. 81.

[20]George W. Snedecor, op. cit., p. 80.

experimentation, and the ability to read are significant characteristics of student material, which affect achievement in the field of experimentation.[21]

There is abundant evidence that general intelligence, as measured by typical intelligence tests, influences the achievement of students.[22] Many investigators have concluded that it is the most important factor.[23] Previous achievement is a significant characteristic of the student material when it functions as a pre-requisite for the learning involved in the experiment. For example, ability to read functions as a tool in learning. For sound research, the correlation with sex seems to be in line with the opinions expressed by many. Both Thorndike[24] and Starch[25] have concluded on the basis of the finding of several investigations reviewed by them that sex is a very minor factor in learning. While sex is a factor of less importance than mental age, it should not be neglected by the educational experimenter who seeks highly dependable results.

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[21]Walter S. Monroe and Max D. Engelhart, "Experimental Research in Education," Bureau of Educational Research, College of Education, Experimental Research in Education (Urbana: University of Illinois Press, 1930), pp. 7-105.

[22]Lewis M. Terman, et al., "Nature and Nurture, Their Influence Upon Achievement," Twenty-Seventh Yearbook of the National Society for the Study of Education, Part II (Bloomington, Illinois: Public School Publishing Company, 1928), p. 397.

[23]J. D. Heilman, "Factors Determining Achievement," The Pedagogical Seminary and Journal of Genetic Psychology, 36 (September, 1929), p. 454.

[24]E. L. Thorndike, Educational Psychology, Vol. III (New York: Teachers College, Columbia University, 1914), pp. 169-205.

[25]Daniel Starch, Educational Psychology (New York: The Macmillan Company, 1919), pp. 63-72.

Since measurement is fundamental to experimentation, use was made of both standardized and informal objective tests.

The mental aptitude of the students was evaluated by the American Council on Education Psychological Examination, 1954 Edition. The Science Research Associates Reading Record was used to measure reading skills and for their previous knowledge of child psychology. The mental test and the reading test were standardized. The Crow and Crow Examination in Child Psychology, 1953 Edition, was used as a pre-test and a final achievement test. This test was not standardized. This was regrettable but not damaging to good research. A quotation from Monroe disposes of that condition. He writes, "It is, of course, not essential that an achievement test be standardized for it to be suitable for use in an experiment."[26]

With the foundation for the study explained, the bases for the group comparisons will be described.

Comparison of the Groups

The initial status of the students who became the subjects for this investigation was determined by the administration of certain tests. To ascertain potential learning ability, the American Psychological Examination, 1954 Edition, was used. To measure reading skills, the Science Research Associates Reading Test was given.

The test file was complete in all cases except one A C E in the experimental group in the summer and six S R A Reading Records for the groups in the fall. The results of these tests would have changed the statistics very little.

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[26]Walter S. Monroe, Experimental Research in Education, p. 20.

It was decided to keep all students who enrolled in the course as members of the investigation. Because students with low ability are present in most courses in college, it was deemed not practicable to ignore statistically those low ability members if the study were to throw light on the complexity of the methodology problem.

Comparison of the Student Population

To compare the status of the groups for the investigation, the following procedures were utilized: The performance of the summer experimental and control groups on the A C E was contrasted; the performance of the fall experimental and control groups on the same test was contrasted; and the performance of the total experimental and control groups on the mental test was examined and compared. The same plan was followed in studying the groups on the reading tests.

Summer Experimental and Control Group Performance on the A C E.

Table II shows a summary of the results of the experimental group for summer, 1954, when compared with the same data for the control group obtained from the A C E. The complete records from which this table is condensed are found in Appendix

The inspection of Table II will reveal that there is no significant difference in the mean performance of the experimental and control groups in the summer of 1954 on the A C E. The means and sigmas were similar and the groups could have been matched by them, but the experimenter decided to treat the data with the t-test of significant difference. Significance of difference was accepted if a level of confidence of .05 or better was established.

The experimental group made a mean score of 106.3 on the A C E. The control group for the same period in the summer of 1954 made a mean

TABLE II

SUMMARY OF RESULTS ON THE A C E PSYCHOLOGICAL EXAMINATION, COLLEGE EDITION, 1954

Experimental and Control Groups
Summer, 1954

Group	N	Highest Score	Lowest Score	Range	Md	Mean	Sigma	t	Significance
Experimental	39	162	65	97	98.75	106.3	21.63)	.46	"none"
Control	15	133	70	63	106.66	103.3	17.25)		

score of 103.3. The difference in means is 3. The next step was to determine whether the difference of 3 was of any significance. The t statistic is a special kind of critical ratio used for small groups to determine the significance of difference in mean performance between two groups. Using the proper statistical calculations, the difference of 3 was found not significant (Appendix G).

The value of t is determined by reading a statistical table. In the case of the comparison of the summer, 1954, groups on the A C E, Table D in Garrett[27] is entered with 52 degrees of freedom, the sum of the number of cases in both groups less one each time. One gets entries of 2.01 at the .05 and 2.68 at the .01 level of confidence. The t does not reach the .05 level and the mean difference of 3 must be marked "non-significant." This is interpreted as meaning that the groups were remarkably alike. There was noted a similarity of means and sigmas on the mental test and the t test of significance shows the groups to be alike in performance on the A C E.

Fall Experimental and Control Group Performance on the A C E.

Sixty subjects took the A C E test to measure the range of ability for the experimental group in the fall of 1954. Forty-six students took the same test for the control group. Using the same techniques which were used for the summer groups, the determination was made that the two groups were statistically matched and that although slight differences on certain factors existed between the two groups, these differences were statistically unimportant. t was found to have a ratio of .34. A t of .34 does not reach the .05 level and the mean difference of 1.5 must be marked "non-significant."

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[27]Henry E. Garrett, op. cit., p. 273.

A summary of the results of the A C E Psychological Examination for the experimental and control group in the fall of 1954-1955 is shown in Table III. The comparison of the groups is made in terms of the range, median, mean, standard deviation, or the sigma score, and the t-test of significance. Each group had students of high ability but, since the result of this investigation is not told in individual achievement but in terms of group performance, the group scores will be compared.

Total Group Performance on the A C E.

The mean raw score for both experimental groups was 97.13, and the mean raw score for the control group was 93.03. This is a difference in mean of 4.1. With 158 degrees of freedom, a t of 1.07 is non-significant. This means that in terms of mental ability as measured on the A C E, the groups for the summer and fall experiments were remarkably alike, and that under the controlled technique each group had the same chance to succeed.

Summer Experimental and Control Group Performance on the S R A Reading Test.

The raw scores obtained on the S R A Reading Record for the experimental and control groups were used. The mean for the experimental group was 105.2, and the mean for the control group was 99.5. The sigma or standard deviation and the standard error of difference were determined by formula (Appendix G), and t was calculated. The t ratio was found to be .93. The t did not reach the .05 level and the mean difference of 5.7 is non-significant. Interpreted, this signifies that the groups are remarkably matched in reading skills. The comparison of the two groups for the summer experiment is found in Table IV.

TABLE III

SUMMARY OF RESULTS ON THE A C E PSYCHOLOGICAL EXAMINATION, COLLEGE EDITION, 1954

Experimental and Control Groups
Fall, 1954-1955

Group	N	Highest Score	Lowest Score	Range	Md	Mean	Sigma	t	Significance
Experimental	60	140	50	90	92.7	91.2	23.70)	.34	"none"
Control	46	150	43	107	91.25	89.7	25.33)		

TABLE IV

SUMMARY OF RESULTS OF THE S R A READING RECORD

Experimental and Control Groups
Summer, 1954

Group	N	Highest Score	Lowest Score	Range	Md	Mean	Sigma	t	Significance
Experimental	40	133	53	80	107.5	105.2	20.70)	.93	"none"
Control	15	124	56	68	97.5	99.5	20.32)		

Fall Experimental and Control Group Performance on the S R A Reading Test.

The comparison of the reading skills on the S R A Reading Record for the fall groups of 1954-1955 is shown in Table V. It will be noticed that these two groups were matched on the abilities as measured by this test. The mean, median, and sigma for the groups were similar. Only the range tended to fluctuate. The t-ratio was .29, which showed no significant difference. Thus, in reading skills, the fall groups were similar.

Total Group Performance on the S R A Reading Test.

The raw mean score for the experimental groups on the reading skills test was 100.8, and the raw mean score for the control groups was 99.01. The difference in raw mean score was 1.79. This gave t a value of .50, which was non-significant.

Group Characteristics.

While the groups were remarkably alike in reading ability as measured by the S R A, there was noted a difference in reading ability scores between the groups of the summer and fall. If the summer groups had higher mental rating, as group norms would seem to indicate, they also had higher reading scores.

Summary of Group Comparison.

It has been noted earlier in this study that there is no significant difference in the mean performance of the experimental and control groups, in either the fall or summer, on the A C E or the S R A Reading Record. In fact, the t test of significance shows the groups to be comparable in performance on both tests; therefore, the groups may be considered comparable groups.

TABLE V

SUMMARY OF RESULTS OF THE S R A READING RECORD

Experimental and Control Groups
Fall, 1954-1955

Group	N	Highest Score	Lowest Score	Range	Md	Mean	Sigma	t	Significance
Experimental	54	137	28	109	100	97.6	23.08)	.29	"none"
Control	45	136	47	89	101.8	98.9	20.56)		

Having determined by the performance on the tests used and statistical treatment of the data that the groups were comparable, the study of the comparison of certain teaching methods was undertaken. This comparison is presented in Chapter IV.

CHAPTER IV

THE DATA OF THE STUDY

Initiating the Study

This study was an attempt to ascertain the effects of directed experiences with children upon the knowledges and understanding of child psychology gained by college students enrolled in Child Psychology 323 at Southeastern State College, Durant, Oklahoma. It was limited to students regularly enrolled in the course between May, 1954, and January, 1955. It was further limited to those knowledges and understandings tested by the Crow and Crow Examination in Child Psychology (1953 Edition). One hundred sixty-one students were involved; sixty-one during the Summer Term; and one hundred during the Fall Term. The experimental and control groups were determined as discussed in Chapter III, page 60.

After the groups had been found comparable each semester, as shown in Chapter III, the Crow and Crow Examination in Child Psychology (1953 Edition) was administered in each section. The experiment proceeded for eight weeks during the Summer Term and for seventeen weeks during the Fall Term as outlined in Chapter III. At the end of each term, the Crow and Crow Examination was repeated for each group. The changes in scores in this material and final achievement testing provided the raw data for the study.

Each time the test was administered, four hours were allotted for taking it. Each student worked independently and at his own rate of speed but under close supervision. Inasmuch as most students completed

the test in three hours, the time allowance was deemed adequate. Each testing session was divided into two periods to lessen fatigue. No copies of the examination were available in the community except those controlled by the experimenter.

The technique of pre-testing, experimentation, and final testing is an accepted technique for determining the comparative effectiveness of different teaching methods with comparable groups.

Results of the Initial Testing

Summer Groups.

The data for the summer experimental and control groups are shown in Table VI. The mean score for the experimental group was 381.48 (rounded to 381) points while the mean score for the control group was 383.33 (rounded to 383) points. Thus, the mean score of the control group was 2 points above the mean score for the experimental group. The *t* statistic was applied (Appendix G) and the value of *t* was found to be .208, or "non-significant" at either the .01 or .05 level.

Fall Groups.

The data for the fall experimental and control groups are presented in Table VII. The mean score for the experimental group was 431.63 (rounded to 432) points. The mean score for the control group was 414.04 (rounded to 414) points. The difference between the mean scores was 18 points. Applying the *t* statistic, *t* was found to have a value of 1.75, a "non-significant" difference (Appendix G) at either the .01 or .05 level.

The Pooled Summer and Fall Groups.

The data for the pooled groups are shown in Table VIII. The mean

TABLE VI

COMPARISON OF EXPERIMENTAL AND CONTROL GROUPS
ON THE CROW AND CROW EXAMINATION IN
CHILD PSYCHOLOGY

Initial Test
Summer, 1954

Group	N	Mean Raw Score	Difference	t	Significance Level of the Difference
Experimental	40	381)	2	.208	"non-significant"
Control	15	383)			

TABLE VII

COMPARISON OF EXPERIMENTAL AND CONTROL GROUPS
ON THE CROW AND CROW EXAMINATION IN
CHILD PSYCHOLOGY

Initial Test
Fall, 1954-1955

Group	N	Mean Raw Score	Difference	t	Significance Level of the Difference
Experimental	60	432)	18	1.75	"non-significant"
Control	46	414)			

TABLE VIII

COMPARISON BETWEEN THE POOLED SUMMER AND FALL EXPERIMENTAL AND CONTROL GROUPS ON THE CROW AND CROW EXAMINATION IN CHILD PSYCHOLOGY

Initial Test
Summer and Fall Groups, 1954-1955

Group	N	Mean Raw Score	Difference	t	Significance Level of the Difference
Experimental	100	412)	6	.600	"non-significant"
Control	61	406)			

score for the pooled experimental group was 411.56 (rounded to 412) points. The mean score for the pooled control group was 406.49 (rounded to 406) points. The difference was 6 points. Again applying the t statistic, the t value was found to be .600 (Appendix G). This difference, therefore, was "non-significant," at either the .01 or the .05 level.

Since differences in achievement on the Crow and Crow examination between the experimental and control groups were "non-significant" in the Summer Term, in the Fall Term, and for the Pooled groups, the conclusion may be drawn that all groups were equal in their knowledge of Child Psychology, as measured by this test, at the beginning of the experiment. Since the groups had been found to be comparable groups (Chapter III), the experimental factor was introduced.

At the end of each term, the final achievement test was administered.

Results of the Final Testing

Summer Groups.

The data for the summer experimental and control groups are presented

in Table IX. The mean score for the experimental group was 501 points. The mean score for the control group was 496 points. The difference in the mean scores was 5. The value of t was determined as .242 (Appendix G). Thus, the difference was "non-significant" at the .05 or .01 level.

Fall Groups.

The data for the fall experimental and control groups are shown in Table X. The mean score for the experimental group was 476 points. The mean score for the control group was 429 points. The difference was 46 points. The t value of 2.99 (Appendix G) was therefore significant at the .01 level.

The Pooled Summer and Fall Groups.

The data for the pooled summer and fall groups are presented in Table XI. The mean score for the experimental group was 486 points. The mean score for the control group was 445 points. The difference was 41 points. The value of t was computed (Appendix G) and found to be 3.01 which was significant at the .01 level of confidence.

TABLE IX

COMPARISON BETWEEN SUMMER EXPERIMENTAL AND CONTROL GROUPS ON THE CROW AND CROW EXAMINATION IN CHILD PSYCHOLOGY

Final Test
Summer, 1954

Group	N	Mean Raw Score	Difference	t	Significance Level of the Difference
Experimental	40	501	5	.242	"non-significant"
Control	15	496			

TABLE X

COMPARISON BETWEEN EXPERIMENTAL AND CONTROL GROUPS
FINAL TEST ON THE CROW AND CROW
CHILD PSYCHOLOGY EXAMINATION

Fall, 1954-1955

Group	N	Mean Raw Score	Difference	t	Significance Level of the Difference
Experimental	60	476)	46	2.99	.01
Control	46	429)			

TABLE XI

COMPARISON BETWEEN POOLED SUMMER AND FALL
EXPERIMENTAL AND CONTROL GROUPS AT THE FINAL TESTING
ON THE CROW AND CROW EXAMINATION IN CHILD PSYCHOLOGY

1954-1955

Group	N	Mean Raw Score	Difference	t	Significance Level of the Difference
Experimental	100	486)	41	3.01	.01
Control	61	445)			

Although the difference between the groups was "non-significant" for the summer groups, it was "significant" for the fall groups and for the pooled groups.

Although the groups were not significantly different in their knowledge of Child Psychology as tested by the Crow and Crow examination at the beginning of the experiment, they were significantly different at the conclusion of the experiment.

Individual Group Gains.

Each of the four groups--Summer Experimental, Summer Control, Fall Experimental, and Fall Control--made gains in raw scores on the Crow and Crow examination. The data summarized in Table XII show the gains made by each of the four groups. The summer experimental group made a gain of 120 points, with a t value of 7.62 (Appendix G). This may be termed "very significant." The fall experimental group showed a gain of 44 points, with a t value of 4.44 (Appendix G). This was again "very significant." The summer control group showed a gain of 112 points, with a t value of 6.03 (Appendix G). This was significant at the .01 level of confidence. The fall control group had a gain of 15 points with a t value of .86 (Appendix G). This was "non-significant."

From these data, the conclusion may be drawn that the gains made by the individual experimental groups were more significant than the gains made by the individual control groups. It is also apparent that the gains made by the summer groups were more significant than those made by the fall groups.

Comparison of Total Experiment and Control Group Gains.

The gains for the total experimental group and the total control group are shown in Table XIII.

TABLE XII

COMPARISON OF THE FOUR GROUPS
AT THE INITIAL AND FINAL TESTING ON THE
CROW AND CROW EXAMINATION IN CHILD PSYCHOLOGY

Summer, 1954; Fall, 1954-1955

Group	N	Mean Initial Score	Mean Final Score	Difference	S.D.$_d$	t	Significance Level of the Difference
Summer Experimental	40	381.45	501.45	120	99.53	7.62	Very Significant
Fall Experimental	60	431.63	457.91	44	77.38	4.44	Very Significant
Summer Control	15	383.33	495.53	112	71.9	6.03	.01
Fall Control	46	414.04	429.12	15	118.23	.86	Non-significant
	N = 161						

Note: On Difference the end figures were rounded.

TABLE XIII

GAINS MADE BY ALL GROUPS PAIRED IN THE EXPERIMENT

Summer, 1954; Fall, 1954-1955

Group	N	Mean Raw Score of Difference in Gains	Difference	t	Significance Level of Difference
Experimental	100	75)	36	3.01	.01
Control	61	39)			

The pooled experimental group showed a gain of 75 points. The pooled control group showed a gain of 39 points. The difference in gain was 36 points. With a t value of 3.01 (Appendix G), this was significant at the .01 level of confidence.

Thus, although both the pooled experimental and pooled control groups showed a gain in score, the difference in gain was significantly greater for the experimental group than for the control group.

Analysis of Test Results by Areas

The Crow and Crow Examination in Child Psychology is divided into fifteen areas, fourteen of which deal with special subjects and one of which is comprehensive. Table XIV shows a summary of the differences between the mean scores of the experimental and control groups in each area at the initial testing, while Table XV shows the differences in the mean scores for the experimental and control groups in each area at the final testing. Computations may be found in Appendix G.

A careful examination of Table XIV shows that in areas 1, 2, 3, 4, 5, 6, 8, 9, 11, 13, 14, and 15 the difference was "non-significant" at the

TABLE XIV

THE SIGNIFICANCE OF THE DIFFERENCE BETWEEN THE MEANS OF THE RAW SCORES OF THE EXPERIMENTAL AND CONTROL GROUPS ON THE CROW AND CROW EXAMINATION IN CHILD PSYCHOLOGY, 1953 EDITION, IN THE SPECIAL AREAS AT THE INITIAL TESTING

Areas	Mean Raw Score for Experimental Group at Initial Testing	Mean Raw Score for Control Group at Initial Testing	Difference	t	*Significance Level of the Difference
1. The Science of Child Study	18.40	17.75	.65	1.27	non-significant
2. The Beginning of Life	31.29	30.26	1.03	1.07	non-significant
3. Anatomical and Physiological Development	24.33	24.54	- .21	0.30	non-significant
4. Development of Motor Abilities	20.39	19.90	.49	0.96	non-significant
5. Development of Communication	25.41	25.66	- .25	0.40	non-significant
6. Mental Development and Intelligence	21.32	21.54	- .22	0.38	non-significant
7. Development of Emotional Behavior	33.08	26.85	6.23	6.11	.01
8. Development of Meaning and Understanding	23.48	22.46	1.02	1.41	non-significant
9. Creative Expression	26.63	26.92	- .29	0.41	non-significant
10. The Dynamics of Children's Behavior	31.44	29.80	1.64	2.05	.05
11. Development of Social Behavior	26.17	25.74	.43	0.74	non-significant
12. Character Development and Discipline	21.13	22.16	-1.03	1.71	.10
13. The Development of Personality	21.70	21.08	.68	0.90	non-significant
14. Mental Hygiene and the Developing Child	28.00	26.79	1.21	1.33	non-significant
15. Over-all View of the Field	58.35	59.98	-1.63	0.31	non-significant

*A $\underline{t}$ value of 2.61 is significant at the .01 level.
A $\underline{t}$ value of 1.98 is significant at the .05 level.
A $\underline{t}$ value of 1.66 is significant at the .10 level.

TABLE XV

THE SIGNIFICANCE OF THE DIFFERENCE BETWEEN THE MEANS OF THE RAW SCORES OF THE EXPERIMENTAL AND CONTROL GROUPS ON THE CROW AND CROW EXAMINATION IN CHILD PSYCHOLOGY, 1953 EDITION, IN THE SPECIAL AREAS AT THE FINAL TESTING

Areas	Mean Raw Score for Experimental Group at Final Testing	Mean Raw Score for Control Group at Final Testing	Difference	t	*Significance Level of the Difference
1. The Science of Child Study	23.22	31.44	1.78	1.62	non-significant
2. The Beginning of Life	37.74	34.34	3.40	2.91	.01
3. Anatomical and Physiological Development	38.00	25.46	2.54	2.85	.01
4. Development of Motor Abilities	22.90	21.90	1.00	1.51	non-significant
5. Development of Communication	28.37	27.10	1.27	1.63	non-significant
6. Mental Development and Intelligence	23.48	23.67	- .19	.23	non-significant
7. Development of Emotional Behavior	35.87	32.75	3.12	3.15	.01
8. Development of Meaning and Understanding	25.38	23.79	1.59	1.78	.10
9. Creative Expression	29.67	26.87	2.80	2.86	.01
10. The Dynamics of Children's Behavior	32.31	29.69	2.62	2.59	.05
11. Development of Social Behavior	28.11	25.69	2.42	2.63	.01
12. Character Development and Discipline	23.42	21.49	1.93	2.24	.05
13. The Development of Personality	23.92	21.03	2.89	3.48	.01
14. Mental Hygiene and the Developing Child	30.46	26.40	4.06	3.69	.01
15. Over-all View of the Field	93.80	82.82	10.98	2.85	.01

*A t value of 2.61 is significant at the .01 level.
A t value of 1.98 is significant at the .05 level.
A t value of 1.66 is significant at the .10 level.

initial testing. The difference was significant in area 7 at the .01 level, in area 12 at the .10 level, and in area 10 at the .05 level.

A study of Table XIV shows that the difference between the groups was significant at the final testing in eleven of the areas and "non-significant" in four of the areas. Difference in areas 1, 4, 5, and 6 were "non-significant" at both testings. Differences in areas 2, 3, 8, 9, 11, 13, 14, 15 were "non-significant" at the initial testing but were significant at the final testing. Differences in areas 7, 10, and 12 were significant at both testings.

An examination of the data in Tables XIV and XV supports the generalization that the experimental factor of directed experiences with children influenced the learning of the experimental group.

Comparison of Performance on Unit Tests

Unit or periodical tests were given to ascertain whether or not the results consistently favored either group during the course of the experiment. The results of these tests were treated more simply than the other data. Frequency distributions were made, and the means, medians, and sigmas figured.

Four such unit or periodical tests were given. The textbook was covered by two tests of 150 multiple-choice questions. The other two unit tests dealt with the influence of the endocrines on growth and the relation of nutrition to growth.

The unit tests were made by Professor Guy A. Lackey, of Oklahoma Agricultural and Mechanical College, and the experimenter. Mr. Lackey's tests, composed of two sections of multiple-choice items, covered the text. The tests which dealt with the influence of the endocrines on growth and the relation of nutrition to growth were made by the experimenter. These tests were objective.

An examination of Table XVI reveals that on the four unit tests the control group surpassed the experimental groups on three tests. The difference in mean raw score was figured but the t test of significance was not used. The nature of the testing objective in this case did not seem to warrant the expenditure of time in making the t calculations.

The data from these tests are found in Appendix G. Because of the bulk of the results for 161 subjects, only samples are produced, and the record of these is summarized in Table XVI and Appendix G.

The purpose of using the unit test was realized: the mean difference never consistently favored either group, or the control group would have made scores superior to the experimental group four times out of the four trials.

Comparison by Mental Ability and Sex

Because of the interest of the experimenter, gains were correlated with mental ability and sex. (Appendix G.) This comparison was apart from the specific problem of the study. The correlation between differences on the A C E for the 160 students is only .17 which is too low to indicate that the more intelligent students have a much better chance of improving than the less intelligent ones. The correlation of .17 is significant at the .05 level but insignificant at the .01 level (Appendix G).

The comparison of improvement with sex (Appendix G) was made by both the t test of significance and bi-serial correlation. The girls showed a slight superiority over the boys, although the boys had almost as good a chance for improvement as did the girls. The bi-serial, r = .24, indicates that there is a slight tendency for the girls to make a higher difference score than the boys. The t ratio of 2.41 was "non-significant"

TABLE XVI

RESULTS OF THE UNIT TESTS

Test	Group		Difference	Favor
	Experimental	Control		
Endocrines and Their Relation to Growth	15.56*	15.92	.36	Control
Influence of Nutrition upon Growth	16.48	18.12	1.64	Control
Chapters 1-8 Based on Breckenridge and Vincent's Child Development	34.56	28.02	6.54	Experimental
Chapters 9-15 Based on Breckenridge and Vincent's Child Development	63.07	63.18	.11	Control

*The unit of measure is the mean raw score.

at the .01 level, but again shows a slight tendency for the girls to make a greater gain than the boys.

The Findings of the Study

From the data appearing in Tables VI to XV, certain findings are evident.

1. The initial test results show that differences in knowledge of child psychology, as measured by the Crow and Crow Examination in Child Psychology, were "non-significant" for:

   a. the summer experimental and control groups

   b. the fall experimental and control groups

   c. the pooled experimental and pooled control groups

2. The final test results show that differences in knowledge of child psychology, as measured by the same Crow and Crow examination were as follows:

   a. The difference between the summer experimental group and the summer control group was "non-significant."

   b. The difference between the fall experimental and control groups was significant at the .01 level of confidence.

   c. The difference between the pooled experimental groups and the pooled control groups was significant at the .01 level.

From the data in Tables XII and XIII, the findings of the study show:

1. Gains in scores made by the summer and fall experimental groups on the Crow and Crow test were "very significant."

2. Gains in scores made by the summer control group on the same test were significant at the .01 level, and gain in score made by the fall control group was "non-significant."

3. The difference between the gains for the pooled experimental group and the pooled control group on the same test was significant at the .01 level.

Tables XIV and XV show that when the Crow and Crow examination results were treated by areas, the difference in gain between the experimental group and the control group was significant at the initial testing in only three areas; at the final testing this difference was significant for eleven of the areas.

Table XVI, which presents the data on the unit tests, shows that the control group surpassed the experimental group on three of the four tests.

Computational tables (Appendix G) present data which show that neither intelligence nor sex were significant factors in this study.

Conclusions

The over-all purpose of the study was to ascertain the effects of directed experiences with children on the knowledges and understandings of child psychology of a group of college students. The study was limited to those knowledges and understandings which are measured by the Crow and Crow Examinations in Child Psychology (1953 Edition) and to those students enrolled in Child Psychology 323 at Southeastern State College, Durant, Oklahoma, between May, 1954, and January, 1955.

Based upon the findings of the study, the following conclusions were drawn:

1. The comparable groups of students, known as the experimental and control groups, were not significantly different in their knowledge of child psychology at initial testing with the Crow and Crow examination.

2. The groups were significantly different in their knowledge of

child psychology at final testing with the Crow and Crow examinations.

3. Gains were made by both the experimental group and control group, but the gain for the experimental group had a greater significance than did that for the control group.

4. Results of a comparison of scores on the separate areas of the test also show a significant difference in favor of the experimental group.

5. Since the experimental factor had been introduced between the initial testing and the final testing, the consistent significant differences in knowledge and understanding of child psychology, as measured by the Crow and Crow examinations, was the result for the students involved in this study of the experimental factor (directed experiences with children). Thus, the study lends support to the theory that directed experiences with children is an effective technique for improving the teaching of a college course in Child Psychology.

Recommendations

Research in the area of the methodology of teaching a course in Child Psychology at the college level still leaves unanswered many questions. Many of these have implications for further research.

1. Similar experiments should be repeated with other groups, in other colleges, with other experimenters, and with other achievement tests to determine whether, under varying conditions, similar results would be achieved.

2. Similar experiments should be made to determine whether student attitude is a factor which influences the effectiveness of methodology.

3. Similar experiments should be made using longer periods of time to ascertain whether duration of time is an important factor in experimentation with method.

4. Similar experiments should be conducted involving retesting at the end of a time lapse to measure the permanence of the gains found at the end of an experiment.

5. Similar experiments should be conducted to ascertain whether or not the number and kind of experiences with children the subjects have had before the experiment is begun influence the effectiveness of the methodology.

6. Further study should be made of the effects of the social and emotional maturity levels of the students involved in the experiment on the outcomes of experiments in methodology.

These recommendations are neither inclusive nor exclusive. They are, however, indicative of the complexity of the problem and of the need for further research.

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APPENDIX A

HOW CHILDREN AT WEST VIRGINIA STATE COLLEGE ARE BROUGHT INTO CONTACT WITH CHILDREN AND HOW SKILLS ARE DEVELOPED IN GATHERING INFORMATION ABOUT CHILDREN.

HOW STUDENTS AT WEST VIRGINIA STATE COLLEGE ARE BROUGHT INTO CONTACT WITH CHILDREN AND HOW SKILLS ARE DEVELOPED IN GATHERING INFORMATION ABOUT CHILDREN

by

Herman C. Canady

At West Virginia State College an attempt is made to exploit the gullibility of people regarding their faith in the ability of the school to educate. The college is located in a small community in which is found an elementary school and a high school. The former is maintained jointly by the state and county and serves as the laboratory for observation and directed teaching in the elementary grades; the latter is primarily a teacher-training high school and is maintained by the state.

Securing the Cooperation of Parents

For the past two years the instructor of the Human Development Course has worked rather closely with our alert Parent-Teachers Association, the membership of which is made up of all social levels. Arrangement is made to have him speak before the group early in the first semester on some phase of Human Development. Advantage is taken of this opportunity to explain to parents the importance of adjusting education to individual differences and the needs of each child, modern methods used for discovering these differences and for understanding children--special emphasis is placed on the "case study" method.

Moreover, the parents are told that (1) they have sent their children to school to be educated and before any real progress can be made in this direction it will be necessary for the teachers to understand each child as an individual; (2) they will be called upon later to give a number of facts concerning their children, some of which may be regarded as rather personal, all of which, however, are necessary in filling out the picture

and coming to an understanding of their children as individuals; and (3) every effort will be made to treat all facts in a professional manner.

Thus far we have had the full cooperation of the parents and there has been no difficulty in bringing our students into contact with children. The planning of field experience is largely in the hands of students. It is their responsibility to select the children to be studied and to make the necessary contacts with parents. This sort of direct experience is expanded and continued throughout the course with increasing emphasis upon responsibility and participation.

Techniques Used in Studying School Children and to Understand Members of the College Class

The course has as its underlying philosophy the belief that human development is not so much a subject to be taught as something to be directly experienced and, therefore, is largely organized about direct firsthand experience. Our field experience program includes the study of members of the class and the study of school children and adolescents. The first semester is given over primarily to a consideration of procedures for studying individuals. This is done in order to change, from the beginning, the students' pattern from subject-centered learning to the problem of understanding persons.

The following techniques are employed to enable students to study and understand individuals and to inculcate in them a more professional interest in human development

1. Although we believe that the student should be met at the beginning of his teaching preparation by a consideration of human beings as his primary concern, nevertheless, the interpretation and integration of experience is of no less importance than the gaining of direct experience. It requires a background of knowledge, a store of secondhand experience,

appropriate concepts, and guidance and correction by these of greater maturity. Consequently, the first three weeks of the course is devoted to an intensive study and class discussion of

(a) Baller, W. R., The Case of Mickey Murphy

(b) Redl, F., Helping Teachers Study Their Children

(c) English, H. G., and Raimy, V., Studying the Individual School Child

(d) Driscoll, G., How to Study the Behavior of Children

This part of the course is designed to give students some idea of the importance of gathering all kinds of information from all sources and of coordinating the many and varied facts concerning a given child in such a way as to see him as a real, living individual reacting to a real, particular, and understood environment.

2. Each student is then required to make at least one case study of a child using the guide given in English and Raimy, Studying the Individual School Child. As many aspects of the child's development as possible is explored and correlated. The child is seen at school, on the playground, at home, in social gatherings, meeting strangers, playing with older and with younger children, etc. His health and health history, his family background, his previous mental and scholastic history are learned.

Each student is also required to administer a scale devised at the college which attempts to evaluate the whole complex of psychological conditions that may impinge directly or indirectly on the intellectual development of a youth. The scale is described in Canady, Gilliland and Buxton, A Scale for the Measurement of the Social Environment of Negro Youth, J. Negro Educ., 11, 4-13, 1942.

When a sufficient number of these studies have accumulated, students begin making formal reports to the Human Development Class. Here an

excellent opportunity is offered for guidance and interpretation of students' experience through class discussion, and to keep the discussion of Human Development on an extremely concrete and realistic level.

3. Finally, use is made of six other instruments in studying school children and adolescents and to understand members of the college class. They are:

(a) Study Questionnaire

(b) Health Questionnaire

(c) Play and Interest Questionnaire

(d) A Written Biography of Each Member of the Class

(e) American Council on Education Psychological Examination

(f) Reading Interest Questionnaire

All of these forms (except "d" and "e") are found in S. L. Pressey, Questionnaires, Harper, 1943.

The individual studies made in connection with (b) and (d) are used to illuminate the status of the whole class. Great value is derived in bringing together in condensed or tabular form a picture of the health status of the class or of the socio-economic status of the families represented.

New Steps To Be Taken

1. Our method of introducing students to the special study of children is to be further improved. Next year we plan to institute a sort of orientation program. Before a student begins making his case study he will be required to devote at least a week to passive observation of children, i.e., he will observe the activities of children in our laboratory schools and write a description of what he sees, focusing attention on children and not techniques of teaching.

2. To date we have limited field work to home and school situations. We are assured, partly on the basis of experience, that for most of our students other contexts are equally desirable, e.g., such experiences as teaching a Sunday School class, assisting a Scout troop, etc.

3. Our critic teacher is to become a greater and more important participant in our field experience program. Plans are under way for the instructor of the Human Development Course, the critic teacher, and a group of students to meet periodically to discuss the field work in all its aspects.

APPENDIX B

1. Letter to Directors of Research

2. List of the Colleges and Universities receiving the above inquiry

3. Letter to State Superintendents of Public Instruction

4. List of the States, the Superintendents of which answered the request

5. Letter to Heads of Departments of Psychology in the State Institutions which trained the most teachers in 1954

6. Questionnaire sent to the Heads of Departments of of Psychology

7. List of Institutions from which questionnaires were returned by the Heads of the Departments of Psychology

May 6, 1955

The Dean or The Director of Research
The Graduate School

Dear Sir:

Will you please help me to ascertain if any research has been done in your graduate school in the field of child psychology by using direct experiences with children?

I am working on an experiment which sought an answer to the problem: Will direct experiences with children improve the teaching of a course in child psychology at the college level? I used the experimental and control groups for the design and the t statistic to measure the level of significant difference.

Do you know of any studies that embrace this material? If so, will you tell me where I may obtain the study?

I should appreciate any information that you might have in regard to the matter or any suggestion that you might make.

Sincerely,

Sally Leonard
Associate Professor
Psychology & Education

SL/les
Enclosure

The Directors of Research of the colleges and universities listed below were sent letters of inquiry concerning research in the related field of this study:

University of California
The School of Education
Berkeley, California

University of California
The School of Education
Los Angeles, California

University of Southern California
School of Education
Los Angeles, California

Stanford University
School of Education
Stanford University, California

University of Colorado
College of Education
Boulder, Colorado

University of Denver
School of Education
Denver, Colorado

Colorado State College of Education
Greeley, Colorado

Yale University
Graduate School
New Haven, Connecticut

George Washington University
School of Education
Washington, D. C.

Florida State University
School of Education
Tallahassee, Florida

University of Florida
College of Education
Gainsville, Florida

Eastern Illinois State College
Department of Education
Charleston, Illinois

University of Chicago
Chicago, Illinois

University of Illinois
Urbana, Illinois

Indiana University
School of Education
Bloomington, Indiana

Iowa State College
Graduate School
Ames, Iowa

State University of Iowa
Iowa City, Iowa

University of Kansas
Lawrence, Kansas

University of Kentucky
Lexington, Kentucky

Louisiana State University
College of Education
Baton Rouge, Louisiana

Johns Hopkins University
Department of Education
Baltimore, Maryland

University of Maryland
College Park, Maryland

Harvard University
Graduate School of Education
Cambridge, Massachusetts

University of Michigan
School of Education
Ann Arbor, Michigan

Merrill-Palmer School
Detroit, Michigan

University of Minnesota
College of Education
Minneapolis, Minnesota

University of Missouri
College of Education
Columbia, Missouri

Ohio University
College of Education
Athens, Ohio

Ohio State University
College of Education
Columbus, Ohio

University of Oklahoma
College of Education
Norman, Oklahoma

Oklahoma A and M College
School of Education
Stillwater, Oklahoma

Oregon State College
School of Education
Corvallis, Oregon

University of Oregon
School of Education
Eugene, Oregon

Columbia University
Teachers College
New York City, New York

Fordham University
School of Education
New York City, New York

New York University
School of Education
New York City, New York

School of Education and
Community Administration
Yeshiva University
New York City, New York

Syracuse University
School of Education
Syracuse, New York

University of Pennsylvania
School of Education
Philadelphia, Pennsylvania

Temple University
Teachers College
Philadelphia, Pennsylvania

George Peabody College
Nashville, Tennessee

The University of Texas
College of Education
Austin, Texas

Southern Methodist University
School of Education
Dallas, Texas

University of Houston
School of Education
Houston, Texas

Bennington College
Bennington, Vermont

The University of Virginia
School of Education
Charlottesville, Virginia

State College of Washington
School of Education
Pullman, Washington

Washington University
Department of Education
Seattle, Washington

University of Washington
College of Education
Seattle, Washington

University of Wisconsin
School of Education
Madison, Wisconsin

University of Wyoming
College of Education
Laramie, Wyoming

Organizations Receiving Letters of Inquiry in Regard to Research Problem:

Department of Health, Education, and Welfare

The Committee on Human Development

American Council on Education

Horace Mann-Lincoln Institute of School Experimentation

Understanding the Child Journal

The American Association for Gifted Children

Child Study Association of America

Society for Research in Child Development

State Superintendent of Public Instruction

On the enclosed card please write the name of the location of the institution in your state which trains the largest numbers of teachers.

Thank you ever so much.

Yours very truly,

Sally Leonard
Associate Professor
Psychology & Education

Superintendents of Public Instruction who answered the request for the name and location of the institution in the state which trained the most teachers in 1954 were located in the following states:

Alabama
Arkansas
Arizona
California
Colorado
Connecticut
Delaware
Florida
Georgia
Idaho
Illinois
Indiana
Iowa
Kansas
Kentucky
Maine
Maryland
Massachusetts
Michigan
Minnesota
Mississippi
Missouri
Montana
Nebraska
Nevada
New Hampshire
New Jersey
New Mexico
North Carolina
North Dakota
Ohio
Oklahoma
Oregon
Pennsylvania
Rhode Island
South Carolina
Tennessee
Texas
Utah
Vermont
Virginia
Washington
West Virginia
Wisconsin
Wyoming

Head or Chairman
Psychology Department

Please return the desired information in the stamped, addressed envelope enclosed for that purpose.

I am completing a study in child psychology and I need the answers to these questions rather quickly.

A brief of the study will be sent to you.

Thank you ever so much.

Sincerely yours,

Sally Leonard
Associate Professor
Psychology & Education
Southeastern State College
Durant, Oklahoma

Please answer the following questions concerning the teaching of child psychology in your college.

How many courses in child psychology do you offer? 1._____ 2._____ 3._____ or more_____

At what level are students permitted to take child psychology?

Freshman_____ Sophomore_____ Junior_____ Senior_____

Fifth Year_____

Are there pre-requisites for the course? Yes_____ No_____

If any, what?_____

Is the course in child psychology taught by the Lecture method_____

Problem approach_____ Observation of children_____ or what_____

_____

Are children actually handled and studied by first hand methods?

Yes_____ No_____

Are children studied by films? Yes_____ No_____

Are children observed by the gauze igloo_____ one-way screen_____

open-floor_____

How many experiences with children are provided? many_____ few_____

some_____ none_____

How are the observations with children directed? Oral directions_____

Observation manual_____ none_____

In what form does the student record his experiences? Log_____

Observation manual_____ Cards_____ None_____

What content receives major emphasis? mental hygiene_____

learning_____ growth and development_____ psychology of school

subjects_____ or what_____

Remarks:

Institutions from which responses to the questionnaires that concerned the teaching of child psychology were made by deans of the departments of psychology were:*

Alabama Polytechnic Institute
Auburn, Alabama

The Arkansas State Teachers College
Conway, Arkansas

Arizona State College
Tempe, Arizona

Los Angeles State College of Applied Arts and Sciences
Los Angeles, California

Colorado State College of Education
Greeley, Colorado

New Haven State Teachers College
New Haven, Connecticut

University of Delaware
Newark, Delaware

Florida State University
Tallahassee, Florida

College of Education
University of Idaho
Moscow, Idaho

Illinois Normal University
Normal, Illinois

Ball State Teachers College
Muncie, Indiana

Iowa State Teachers College
Cedar Falls, Iowa

Emporia State Teachers College
Emporia, Kansas

Eastern Kentucky State College
Richmond, Kentucky

Gorham State Teachers College (Elementary)
Gorham, Maine

Michigan State College
East Lansing, Michigan

Wayne University
Detroit, Michigan

University of Minnesota
Minneapolis 14, Minnesota

Mississippi Southern College
Hattiesburg, Mississippi

University of Mississippi
University, Mississippi

College of Education
University of Missouri
Columbia, Missouri

Montana State University
Missoula, Montana

Keene Teachers College
Keene, New Hampshire

Plymouth Teachers College
Plymouth, New Hampshire

New Mexico A and M College
Las Cruces, New Mexico

Eastern New Mexico University
Portales, New Mexico

Agricultural and Technical College (Negro)
Greensboro, North Carolina

State Teachers College
Minot, North Dakota

*The state superintendents of public instruction in each state furnished the names and locations of the institutions which trained the largest numbers of teachers in their respective states in 1954.

Ohio State University
Columbus, Ohio

Oklahoma A and M College
Stillwater, Oklahoma

State Teachers College
West Chester, Pennsylvania

Rhode Island College of Education
Providence, Rhode Island

Winthrop College
The South Carolina College for Women
Rock Hill, South Carolina

Middle Tennessee College
Murfreesboro, Tennessee

The University of Houston
Houston, Texas

University of Vermont
Burlington, Vermont

Radford
Women's Division Virginia Polytechnic Institute
Radford, Virginia

University of Washington
Seattle, Washington

University of Wisconsin
Madison 6, Wisconsin

APPENDIX C

List of the Texts in Child Psychology from which the Crow and Crow *Examination in Child Psychology* is keyed.

Crow and Crow Child Psychology was keyed to the following standard textbooks:

Barker, Kounin, Wright (eds.), Child Behavior and Development, 1943, McGraw-Hill.

Breckenridge and Vincent, Child Development (2nd edition), 1949, Saunders.

Brooks, Child Psychology, 1937, Houghton-Mifflin.

Carmichael (ed.), Manual of Child Psychology, 1946, Wiley.

English, Child Psychology, 1941, Holt.

Garrison (ed.), Growth and Development, 1952, Longmans, Green.

Gesell and Ilg, The Child from Five to Ten, 1949, Harper.

Hurlock, Child Development (2nd edition), 1950, McGraw-Hill.

Jersild, Child Psychology (3rd edition), 1947, Prentice-Hall.

Merry and Merry, The First Two Decades of Life, 1950, Harper.

Millard, Child Growth and Development in the Elementary School Years, 1951, Heath.

Morgan, Child Psychology (3rd edition), 1942, Farrar & Rinehart.

Olson, Child Development, 1949, Heath.

Skinner and Harriman (eds.) Child Psychology, 1941, Macmillan.

Strang, An Introduction to Child Study (3rd edition), 1951, Macmillan.

Thompson, Child Psychology, 1952, Houghton-Mifflin.

Thorpe, Child Psychology and Development, 1946, Ronald.

APPENDIX D

FILMS

List of Films for the Experimental Group

All experimental subjects saw the following films:[1]

And So They Live.

Shown for its ecological factors.

The tragic poverty of the land in a rural southern community, the lack of proper diet, housing and sanitation, and the need for better adaptation of the school program to the problems of the community. There is a detailed and intimate picture of the family, the real affection and respect among the family members emerging as clearly as the unfortunate social and economic circumstances under which they live.

The River.

Shown for its human ecological factor.

In nine sequences the film traces life in the valley of the Mississippi River during the last 150 years: the early days of cotton culture; the lumbering operations in the North, and agriculture in the valley. The consequences of share cropping, soil exhaustion, unchecked erosion and floods are shown. Emphasizes that ". . . .we have taken the valley apart and we can put it together again."

Terrible Twos and Trusting Threes.

A study of child behavior at two and three years, showing what to expect from youngsters of these ages, and suggesting how parents can deal constructively with the problems they present. The film shows a group of active children in play grounds, nursery school and home, first as two year olds, and then as threes. In play, we see they learn control of

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[1]Film descriptions are taken from the Educational Films Guide. (New York: The H. W. Wilson Company, 1953; 1954).

their bodies, the qualities of different materials, and how to give and take with other people. At home an average mother is seen handling such problems as destructiveness, tantrums, and unreasonable fears.

Frustrating Fours and Fascinating Fives.

At home at the age of four we see a boy's behavior deviate from childish helplessness to vigorous self-assertion, and at kindergarten, from imaginative craftsmanship to inconsistent destructiveness. Although the change is gradual, at five Roddy appears more independent of adult support with an insatiable curiosity about everything around him.

Sociable Sixes Up to Nines.

Tells how a mother deals with three children ages six, eight, and nine, giving practical hints how to handle such a family as the children run the gamut of behavior from good to bad. The film describes typical behavior reactions of a six year old girl, her two brothers, and a nine year old girl next door. Sensible parental guidance, skillful plan of out-of-school activity, and recognition that childhood has its own values aside from preparation for adulthood are high lights.

Feeling Left Out?

Explains how a high school student may overcome the feeling of being left out by making friends with individuals rather than trying to join cliques.

Children's Emotions.

Discusses the major emotions of childhood--fear, anger, jealousy, curiosity and joy. Points out what can be done to lessen fears and promote the child's happiness and natural development.

Social Sex Attitudes in Adolescence.

One of a series of five films on adolescent behavior. Introduces sex attitudes of adolescence with explanatory research.

Learning to Understand Children.

Parts I and II

This film records the efforts of a teacher, Mary Brown, to help a socially maladjusted girl of fifteen by planning a remedial program applicable to many such cases of problem children. The continuation shows the teacher's plan of using the school girl's interest in acting as a means of improving her self-confidence and interest in school work.

Problems of Pupil Adjustment: The Drop Out.

A picture that presents the characteristics of a high school program which led Steve Martin to leave school as soon as the law permitted. The film suggests a program with class subjects related to the interests of the boys and girls.

Problems of Pupil Adjustment: The Stay In.

This film shows what can be done to meet the problems of the "drop out" when individual pupil needs are not in the school program that stresses learning in terms of adjustment to actual every day living. Present classes which use these principles of learning.

Preface to a Life.

The effect of three different parental attitudes toward a child is the main interest of this film. When the parents help the child to develop according to his own capabilities, not expecting too much of him, and not keeping him too dependent on others, the boy grows up into a man capable of living a satisfying and productive life.

APPENDIX E

SAMPLE OBSERVATION BLANK

If the parent tries to force him to become the kind of man each wishes him to be, he is unable to meet their demands and he grows up to be a restless and dissatisfied person.

High Walls.

Two teenage boys land in a hospital after a gang fight. A psychiatrist and a social worker reconstruct the background of facts which explain their behavior. They find that fear, frustration, and narrow, bigoted thinking have been fostered in the boys by their environment. The film suggests that the way to break the hate chain is to allow children to express themselves freely, creatively, and associate with all classes.

Some of the experimental subjects saw the following films of the Arnold Gesell series:

Baby's Day at Twelve Weeks

Behavior Patterns at One Year

Thirty-six Weeks Behavior Day

Behavior Patterns at Five Years

The titles of these films connote the subject-matter which they demonstrate.

OBSERVATION BLANK*

Social Behavior	Summary I	II	III
Does he seem eager to be part of the group?			
Is his presence requested by others?			
Does he enjoy a wide circle of friends?			
Is he open and frank in his manner with adults?			
Does he appear secure in the group?			
Is he a leader in active play?			
Is he a leader in quiet play?			
Does the group give attention to him when he presents ideas in a discussion group?			
Does he respect the ideas of others?			
Does he respect the rights of others?			
Does he understand about the rights of others?			
Does he stand up for his own rights?			
Does he solve his own social problems without appealing to adults?			
Does he respond agreeably to suggestions of adults?			
Does he respond agreeably to suggestions of children?			
Does he take responsibility for his own personal things (Mittens, Toys, etc.)?			

*Headley and Foster, A Manual for Teachers (New York: The American Book Company).

Social Behavior Summary I II III

Does he take responsibility for room appearance?_____

Does he take responsibility for his own routine activities (washing, going to the toilet, etc.)?_____

Does he like to share his possessions with others?_____

Does he complete activities in a reasonable length of time?_____

Samples of specific and dated observations upon which you have based your judgment of the child's:

Social Behavior Summary I II III

OBSERVATION BLANK

Emotional Behavior Summary I II III

Affection

Does he show affection for children?_____

Does he show affection for adults?_____

Does he show affection for pets?_____

Joy

Does he express happiness and joy in simple pleasures?_____

What is his reaction to praise?_____

Joy--cont' Summary I II III

Does he share in the joy of others?_____

Can he find enjoyment in the child group regardless of adult presence?_____

Sorrow and Distress

Is he sympathetic with others in their misfortunes?_____

Is he distressed by his own shortcomings?_____

Does he cry over situations?_____

Fear and Timidity

Does he show fear in the face of physical danger?_____

Is he timid when meeting new situations?_____

Is he self-assertive?_____

What is his reaction to negative criticism?_____

Anger

Does he resent adult interference?_____

Does he resent child interference?_____

Does the thwarting by inanimate forces arouse his anger?_____

Are his anger expressions overt?_____

Excitability

Is he excited by normally stimulating experiences?_____

Jealousy

Does he measure his rights against those of others?_____

Emotional Behavior	Summary I	II	III

Moods

Does he devote a reasonable amount of time to thinking his own thoughts?_____

Does he shift moods frequently?_____

Summary I	Summary II	Summary III

Underline any nervous habits which he may exhibit: thumb sucking, nail biting, stuttering, masturbating, twisting hair, chewing clothes.

List any other undesirable habits you observed:

EMOTIONAL BEHAVIOR

Use the rating suggested below:

Most wholesome emotional reaction:

5

4x 4/

3x 3/

2x 2/

1x 1/

Insufficient emotional reaction Excessive emotional reaction

OBSERVATION BLANK

Intellectual Behavior Summary I II III

Is he alert to his environment?_____

Does he give evidence of ability to retain facts?_____

Is he eager for information?_____

Can he give back information clearly?_____

Does he make pertinent and relevant remarks?_____

Does he initiate his own activities?_____

Does he carry activities through?_____

Does he solve his problems wisely?_____

Can he concentrate on the matter at hand?_____

Does he judge the worth of his own work wisely?_____

Does he show an interest in number concepts?_____

Does he show an interest in printed words?_____

Does he enjoy stories told or read without pictures?_____

Does he enjoy picture books?_____

Can he make up stories?_____

Is his vocabulary adequate to his needs?_____

Does he use good English (grammar)?_____

Has he a sense of humor?_____

APPENDIX F

RAW DATA

1. A C E Psychological Examination
2. S R A Reading Record
3. Crow and Crow Difference--
   Initial and Final Testing
4. Unit Tests
5. Crow and Crow Area Differences--
   Initial and Final Testing

RAW DATA
AND
INTERPRETATIONS

Control Group
Summer
1954

A C E Psychological Examination
1954 College Edition

College: Southeastern State College Date: 7 June 1954

Subjects	Raw Score	PERCENTILES Q-Score	L-Score	Total Score
R.B.	89	15	37	22
B.N.B.	118	66	67	66
C.B.	113	62	58	57
M.C.	100	39	35	33
D.C.	84	18	23	17
K.G.	92	30	29	24
S.H.H.	109	13	84	49
E.L.	133	90	78	86
E.M.	80	13	21	13
T.P.	119	54	75	67
V.P.	70	30	4	7
F.S.	119	91	45	67
J.E.S.	98	22	50	30
J.S.	106	70	35	41
W.R.	119	62	71	67

RAW DATA
AND
INTERPRETATIONS

Experimental Group
Summer
1954

A C E Psychological Examination
College Edition 1954

College: Southeastern State College Date: 22 July 1954

Subjects	Raw Score	PERCENTILES Q-Score	L-Score	Total Score
D.A.	105	62	32	40
F.B.	126	54	88	79
A.B.	162	98	98	99
R.F.B.	94	37	27	26
E.B.	105	73	31	40
P.C.	97	38	31	29
C.D.	132	97	62	85
S.F.	121	66	73	71
R.G.	133	73	90	86
W.L.G.	69	30	3	4
J.H.	68	10	10	6
D.L.H.	131	92	71	84
J.H.	88	15	35	21
S.H.	114	58	62	59
B.E.H.	133	90	78	86
L.H.	84	17	25	17
J.A.H.	65	33	2	5
A.F.H.	103	39	42	38
W.J.	116	62	65	63
K.K.	137	87	89	90
E.R.L.	113	66	55	57

Experimental Group
Summer, 1954
(Concluded)

Subjects	Raw Score	PERCENTILES Q-Score	L-Score	Total Score
J.J.McM.	80	27	12	13
E.M.	123	76	71	74
B.M.	123	94	50	74
N.M.	77	22	11	12
P.O.N.	95	54	21	27
O.W.P.	109	76	37	49
M.L.P.	65	7	10	6
M.P.	124	70	77	76
J.J.R.	88	12	40	21
J.R.	112	39	65	56
D.R.	119	91	45	67
H.S.	133	76	89	86
J.S.	82	37	10	15
D.S.	108	58	48	46
B.T.	116	62	65	38
C.J.V.	104	22	65	38
B.W.	89	20	31	22
A.W.	101	76	21	34

RAW DATA
AND
INTERPRETATIONS

Control
Fall
1954-55

A C E Psychological Examination
College Edition

College: Southeastern State College Date: 18 January 1955

Subjects	Raw Score	PERCENTILES Q-Score	L-Score	Total Score
D.B.	97	29	50	39
D.L.B.	67	8	9	6
J.C.B.	110	59	84	79
C.W.C.	80	45	61	55
P.C.	87	77	52	64
H.V.D.	91	6	10	6
T.D.	99	34	38	35
J.A.E.	103	45	35	37
A.D.E.	76	19	57	37
P.G.E.	133	52	95	88
M.L.G.	116	34	77	62
R.J.G.	79	10	40	21
L.W.H.	101	41	63	55
A.L.H.	136	97	97	99
P.H.	133	63	85	81
B.J.H.	97	7	35	16
E.H.	92	8	66	32
A.H.	112	63	55	59
E.H.	116	63	55	59
L.M.J.	109	3	87	37
R.K.	113	59	71	69

Control
Fall, 1954-55
(Concluded)

Subjects	Raw Score	PERCENTILES Q-Score	L-Score	Total Score
M.L.	83	18	29	21
J.B.L.	130	73	99	98
G.L.	89	4	38	13
C.E.L.	56	19	6	8
B.N.McC.	110	37	75	62
D.R.McK.	80	21	33	25
D.H.M.	107	95	92	96
E.M.	128	32	66	52
M.A.M.	91	21	18	17
N.M.	67	8	12	8
H.N.	124	99	97	99
J.V.P.	104	48	85	76
J.P.	107	63	77	74
P.L.P.	114	48	85	76
J.P.	47	7	4	4
W.P.	109	13	82	50
N.J.P.	92	29	63	49
M.R.	74	6	11	6
J.W.S.	91	26	31	27
R.E.S.,Jr.	79	19	42	29
C.S.	102	73	71	74
J.C.S.	100	85	45	64
E.S.	101	29	50	39
J.C.W.	68	32	4	9
F.G.W.	128	87	84	88

RAW DATA
AND
INTERPRETATIONS

Experimental Group
Fall
1954-55

A C E Psychological Examination
College Edition

College: Southeastern State College

Date: 18 January 1955

Subjects	Raw Score	PERCENTILES Q-Score	L-Score	Total Score
N.H.A.	135	63	99	97
J.A.	54	2	27	8
B.B.	118	87	80	87
K.B.	97	73	45	57
D.B.	50	5	12	6
N.J.C.	94	56	50	52
R.C.	112	77	77	80
J.A.C.	87	41	42	41
F.D.C.	103	29	85	67
H.D.C.	95	87	29	54
M.B.C.	99	48	66	60
M.J.C.	89	13	75	44
E.N.C.	99	41	71	60
J.F.D.	77	11	50	27
M.K.D.	81	29	38	32
R.R.D.	105	63	71	70
E.W.D.	130	91	94	95
W.F.	127	87	93	94
R.G.	86	73	21	39
M.J.G.	88	14	71	43
K.E.G.	50	3	17	6

Experimental Group
Fall, 1954-55
(Continued)

Subjects	Raw Score	PERCENTILES Q-Score	L-Score	Total Score
F.G.H.	140	99	88	99
R.D.H.	82	21	47	33
A.W.H.	106	67	71	71
C.H.	56	14	9	9
M.J.J.	110	63	80	77
L.E.K.	101	70	57	64
M.M.K.	105	73	63	70
J.A.L.	75	11	45	24
E.C.L.	102	26	85	65
D.L.	119	52	95	88
Z.McC.L.	81	32	35	32
N.L.	56	2	31	9
C.D.McA.	97	56	57	57
D.E.McD.	103	52	73	67
N.M.	59	10	15	10
R.M.	77	59	14	27
J.B.M.	83	32	40	35
D.L.N.	72	24	23	21
M.J.O.	117	48	94	86
L.O.P.	54	5	17	8
D.J.P.	92	29	63	49
J.A.P.	58	7	20	10
G.R.R.	61	14	14	12

Experimental Group
Fall, 1954-55
(Concluded)

Subjects	Raw Score	PERCENTILES Q-Score	L-Score	Total Score
K.K.S.	124	83	92	92
B.C.S.	66	26	13	15
J.D.S.	54	9	11	8
B.S.,Jr.	90	10	80	45
W.S.	101	80	50	64
G.J.S.	90	29	59	45
J.C.S.	117	70	88	86
A.M.T.	75	10	47	24
J.H.T.	104	59	71	69
A.T.	132	87	96	96
H.D.T.	89	13	75	44
B.W.T.	107	59	77	73
P.A.T.	85	26	50	37
J.L.W.	57	5	21	9
N.L.W.	81	18	50	32
P.H.W.	118	73	88	87

RAW DATA
AND
INTERPRETATIONS

Control Group
Summer
1954

S R A Reading Record

College: Southeastern State College Date: 4 June 1954

Subjects	Rate	Total Score	Percentile
R.M.B.	440	117	67
B.N.B.	350	126	81
C.B.	420	122	72
M.L.C.	400	83	18
D.H.C.	300	80	15
S.H.H.	340	108	50
G.F.K.	250	57	3
E.L.	590	122	72
E.V.M.	350	81	16
T.N.P.	400	124	79
V.L.P.	480	80	15
W.I.R.	500	112	67
F.D.S.	400	99	34
J.E.S.	580	95	31
J.F.S.	400	84	19

RAW DATA
AND
INTERPRETATIONS

Experimental Group
Summer
1954

S R A Reading Record

College: Southeastern State College

Date: 7 June 1954

Subjects	Rate	Total Score	Percentile
T.A.	260	96	33
D.E.B.	370	82	17
D.F.B.	260	110	55
A.B.	330	141	96
R.T.B.	600	121	70
E.R.B.	270	107	47
P.J.C.	350	107	47
W.C.D.	400	131	86
J.S.F.	290	122	72
R.M.G.	250	108	54
W.G.	262	53	3
J.H.	160	66	6
D.H.	360	112	57
J.H.	330	88	22
S.L.H.	320	121	71
B.E.H.	290	131	86
J.A.H.	320	93	28
A.F.H.	220	86	21
W.J.	360	133	88
K.K.	470	129	84
E.R.L.	290	85	20
H.L.	360	94	29

Experimental Group
Summer, 1954
(Concluded)

Subjects	Rate	Total Score	Percentile
E.M.,Jr.	260	114	61
B.F.M.	480	121	71
J.J.McM.	220	82	17
N.H.M.	420	84	19
P.O.N.	220	87	22
O.W.P.	350	105	45
M.L.P.	320	83	23
M.P.P.	350	129	89
J.J.R.	270	76	11
J.J.R.	300	127	82
D.C.R.	470	115	65
H.S.	350	129	89
W.J.S.	300	97	37
D.L.S.	220	92	28
B.A.T.	230	95	30
C.J.V.	230	111	56
B.J.W.	400	133	87
A.G.W.	280	95	30

RAW DATA
AND
INTERPRETATIONS

Control Group
Fall
1954-55

S R A Reading Record

College: Southeastern State College Date: 25 October 1954

Subjects	Rate	Total Score	Percentile
D.B.	360	97	34
D.L.B.	370	67	6
J.C.B.	370	110	56
C.W.C.	370	80	15
P.O.C.	520	87	20
H.V.D.	420	91	26
T.D.	350	99	35
J.A.E.	250	103	44
A.E.	470	76	11
P.G.E.	410	133	91
M.L.G.	370	116	64
R.J.G.	370	79	14
L.W.H.	230	101	40
A.L.H.	360	136	88
P.W.H.	300	133	88
E.H.	350	97	34
B.J.H.	270	92	30
A.J.H.	300	112	57
E.D.H.	510	116	64
L.M.J.	220	109	54
R.V.K.	280	113	59
M.R.L.	280	83	18

Control Group
Fall, 1954-55
(Concluded)

Subjects	Rate	Total Score	Percentile
J.B.L.	410	130	85
G.C.L.	390	89	24
C.E.L.	300	56	1
B.N.McC.	390	110	54
D.R.McK.	270	80	15
D.H.M.	240	107	50
E.A.M.	460	128	84
M.A.M.	330	91	26
N.M.	490	67	8
H.V.N.	260	124	78
J.V.P.	220	104	44
J.P.	260	107	51
P.L.P.	320	114	62
J.W.P.	190	47	1
T.P.	290	109	54
N.J.P.	190	92	30
M.R.	230	74	10
J.W.S.	220	91	27
C.L.S.	280	102	40
J.C.S.	300	100	35
E.J.S.	250	101	39
J.C.W.	460	68	6
F.G.W.	380	128	83

RAW DATA
AND
INTERPRETATIONS

Experimental Group
Fall
1954-55

S R A Reading Record

College: Southeastern State College Date: 25 October 1954

Subjects	Rate	Total Score	Percentile
N.H.A.	280	131	86
J.A.	430	91	26
B.B.	390	123	77
H.K.B.	350	104	44
D.B.	440	51	1
N.J.C.	410	111	55
R.C.	250	110	54
J.A.C.	570	104	45
F.D.C.	600	28	1
D.H.C.	240	63	3
M.B.C.	300	92	30
M.J.C.	310	82	17
J.F.D.	330	80	15
M.K.D.	240	78	13
R.R.D.	290	123	76
E.W.D.	410	105	45
W.F.	350	131	86
R.G.	250	84	19
M.J.G.	230	94	31
K.E.G.	350	90	25
F.G.H.	600	132	87
R.D.H.	330	92	30
A.W.H.	400	106	46

Experimental Group
Fall, 1954-55
(Continued)

Subjects	Rate	Total Score	Percentile
C.H.	180	60	2
M.J.J.	360	114	62
M.M.K.	310	113	59
J.A.L.	240	97	32
E.C.L.	310	117	65
D.T.L.	330	131	86
Z.McC.L.	440	96	34
N.L.	340	82	17
O.D.McA.	320	125	80
D.E.McD.	380	121	72
R.M.	190	81	15
D.L.N.	250	79	14
M.J.O.	330	137	92
L.O.P.	240	66	6
D.J.P.	510	105	47
J.A.P.	270	75	10
G.R.R.	240	66	4
B.C.S.	320	56	2
J.D.S.	280	64	3
B.J.S.	320	91	26
W.E.S.	290	95	32
G.J.S.	290	109	54
J.C.S.	570	127	82
A.M.T.	580	103	43

Experimental Group
Fall, 1954-55
(Concluded)

Subjects	Rate	Total Score	Percentile
J.H.T.	460	112	57
A.T.	340	120	70
H.W.T.	440	90	25
B.W.T.	330	92	30
J.L.W.	360	116	64
N.L.W.	430	116	64
P.H.W.	360	108	52

RAW DATA TABLE

Experimental Group
Summer
1954

Difference in Initial Score and Final Score
Crow and Crow Examination
Child Psychology

Subjects	Initial Score	Final Score	Difference
T.C.A.	317	501	184
D.H.A.	392	432	40
D.F.B.	438	662	224
A.B.	449	691	242
R.T.B.	342	396	54
E.R.B.	360	387	27
P.J.C.	383	653	270
W.C.D.	389	596	207
J.S.F.	422	530	108
R.N.G.	396	501	105
W.L.G.	327	333	6
J.H.	307	616	309
D.L.H.	378	451	73
J.R.H.	344	435	91
S.L.H.	413	567	154
B.E.H.	346	518	172
J.A.H.	381	505	124
A.F.H.	348	424	76
W.J.	395	517	122
K.E.K.	429	625	196
E.R.L.	373	434	61

Experimental Group
Summer, 1954
(Concluded)

ıbjects	Initial Score	Final Score	Difference
H.C.L.	345	407	62
E.M.,Jr.	428	511	83
B.F.M.	375	582	154
J.J.M.	341	366	25
N.H.M.	397	475	78
P.O.N.	371	450	79
D.W.P.	321	466	145
M.L.P.	391	584	193
M.P.P.	437	504	67
J.J.R.	385	602	217
J.J.R.	414	512	98
D.C.R.	409	497	88
H.S.	378	423	45
W.H.S.	401	499	98
D.L.S.	335	388	53
B.A.T.	417	502	85
C.J.V.	407	497	90
B.J.W.	447	602	155
A.G.W.	330	416	86

RAW DATA TABLE

Experimental Group
Fall
1954-55

Difference in Initial Score and Final Score
Crow and Crow Examination
Child Psychology

Subjects	Initial Score	Final Score	Difference
N.H.A.	518	531	13
J.A.	418	447	29
B.B.	385	388	3
H.K.B.	371	448	77
D.B.	368	383	15
N.A.C.	425	483	58
R.C.	397	425	28
J.A.C.	410	536	126
F.D.C.	376	387	11
H.D.C.	413	420	7
M.B.C.	474	498	24
M.J.C.	425	446	21
E.C.	484	495	11
J.F.D.	365	456	91
M.K.D.	365	485	120
R.R.D.	468	553	85
E.W.D.	457	510	53
W.F.	504	666	162
R.G.	399	416	17
M.J.G.	454	486	32
K.E.G.	380	448	68

Experimental Group
Fall, 1954-55
(Continued)

Subjects	Initial Score	Final Score	Difference
F.G.H.	449	490	41
R.D.H.	460	502	42
A.U.H.	375	417	42
C.H.	430	443	13
M.J.J.	465	707	242
L.E.K.	394	424	30
M.M.K.	479	496	17
J.A.L.	415	439	24
E.C.L.	493	527	34
D.T.L.	507	529	22
Z.M.	453	486	33
N.L.	398	431	33
O.D.M.	480	483	3
D.M.D.	434	493	59
N.M.M.	385	401	16
R.M.	424	474	50
J.B.N.	394	404	10
D.L.N.	399	421	22
M.J.O.	484	541	57
L.O.P.	396	419	23
D.J.P.	457	513	56
J.A.P.	420	454	34
G.R.R.	374	422	48
K.K.S.	517	523	6

Experimental Group
Fall, 1954-55
(Concluded)

Subjects	Initial Score	Final Score	Difference
B.C.S.	340	388	48
J.D.S.	381	391	10
B.S.	447	477	30
W.E.S.	459	433	-26
G.J.S.	456	490	34
J.C.S.	498	517	19
A.M.T.	472	523	51
J.H.T.	463	648	185
A.B.T.	498	507	9
H.W.T.	355	411	56
B.W.T.	503	497	-6
P.A.T.	460	487	27
J.W.	402	442	40
N.W.	477	504	27
P.H.W.	349	494	145

RAW DATA TABLE

Control Group
Summer
1954

Difference in Initial Score and Final Score
Crow and Crow Examination
Child Psychology

Subjects	Initial Score	Final Score	Difference
R.N.B.	407	610	203
B.N.B.	397	503	106
C.B.	422	543	121
M.L.C.	366	406	40
D.H.C.	406	469	63
S.H.H.	430	532	102
G.K.	334	362	28
E.L.	407	522	115
E.V.M.	386	484	98
T.N.P.	400	545	145
V.L.P.	308	470	162
W.R.	387	456	69
F.D.S.	349	522	173
J.E.S.	376	496	120
J.F.S.	375	513	138

RAW DATA TABLE

Control Group
Fall
1954-55

Difference in Initial Score and Final Score
Crow and Crow Examination
Child Psychology

Subjects	Initial Score	Final Score	Difference
D.B.	432	39	393
D.L.B.	325	395	70
J.C.B.	394	419	25
C.W.C.	338	443	105
P.O.C.	291	187	-104
H.D.V.	367	387	20
T.D.	361	374	13
J.A.E.	408	417	9
A.D.E.	402	395	-7
P.C.E.	475	539	64
M.L.G.	469	469	0
R.J.G.	414	288	-126
I.W.H.	427	451	29
A.L.H.	508	500	-8
P.W.H.	499	498	-1
B.J.H.	404	415	11
E.H.	390	465	75
A.J.H.	440	460	20
E.D.H.	474	511	37
L.M.J.	483	503	20
R.K.	408	667	259

Control Group
Fall, 1954-55
(Concluded)

Subjects	Initial Score	Final Score	Difference
M.R.L.	378	379	1
J.B.L.	477	518	40
G.L.	391	388	-3
C.E.L.	398	323	-75
D.H.M.	428	397	-31
D.M.	368	445	97
B.M.	404	382	-22
E.M.	485	499	6
M.A.M.	449	453	4
N.M.	328	350	22
H.V.N.	504	559	55
J.V.P.	329	511	182
J.P.	464	456	-18
P.L.P.	494	663	169
J.W.P.	371	354	-17
T.W.P.	461	531	70
N.J.P.	448	469	21
M.R.	378	392	14
J.W.S.	336	354	18
R.E.S.	251	394	143
C.S.	468	421	-47
J.C.S.	442	403	-39
E.S.	460	450	-10
J.C.W.	368	401	33
F.G.W.	457	426	-31

RAW DATA OF THE RESULTS OF UNIT SUBJECT MATTER TESTS
FROM WHICH TABLE XVI WAS SUMMARIZED

Test		Group Experimental	Control	Difference*	Favor
Endocrines and Their Relation to Growth	Possible Score	24	24		
	Highest Score	20	23		
	Lowest Score	7	6		
	Range	13	17		
	Median	15.625	15.652		
	Mean	15.56	15.92	.36	Control
Influence of Nutrition Upon Growth	Possible Score	40	40		
	Highest Score	26	25		
	Lowest Score	8	8		
	Range	18	17		
	Median	16	18.114		
	Mean	16.48	18.12	1.64	Control
Breckenridge and Vincent Child Development, Chapters 1-8	Possible Score	50	50		
	Highest Score	45	44		
	Lowest Score	9	11		
	Range	36	33		
	Median	39.375	25.39		
	Mean	34.56	28.02	6.54	Experimental
Breckenridge and Vincent Child Development, Chapters 9-15	Possible Score	100	100		
	Highest Score	84	85		
	Lowest Score	31	10		
	Range	51	75		
	Median	66.875	68.75		
	Mean	63.07	63.18	.11	Control

*Difference refers to the difference between the mean raw scores of the pooled experimental and control groups.

RAW DATA TABLE

ANALYSIS OF TEST RESULTS BY AREAS ON THE CROW AND CROW EXAMINATION IN CHILD PSYCHOLOGY
EXPERIMENTAL GROUP
SUMMER 1954

Subjects	Areas Tested* 1			2			3			4			5			6			7			8			9			10			11			12			13			14			15		
	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D
T.C.A.	21	21	0	37	43	+6	23	29	+6	14	24	+10	21	31	+10	23	26	+3	25	36	+11	20	22	+2	25	30	+5	22	36	+14	19	28	+9	17	19	+2	19	22	+3	21	31	+10	10	103	+93
D.H.A.	30	19	-1	28	33	+5	23	28	+5	24	24	0	29	26	-3	22	24	+2	29	32	+3	29	27	-2	25	25	0	35	31	-4	27	29	+2	22	21	-1	27	22	-5	30	19	-11	22	72	+50
D.F.B.	20	38	+18	40	54	+14	28	41	+13	22	32	+10	26	37	+11	23	32	+9	43	47	+4	30	36	+6	32	38	+6	38	40	+2	32	40	+8	24	29	+5	23	34	+11	33	39	+6	24	125	+101
A.B.	23	39	+16	34	56	+22	28	45	+17	24	31	+7	32	38	+6	25	33	+8	41	47	+6	32	39	+7	29	38	+9	40	42	+2	31	39	+8	27	30	+3	26	34	+8	32	43	+11	23	137	+114
R.T.B.	18	20	+2	33	35	+2	25	23	-2	15	20	+5	19	29	+10	20	21	+1	22	24	+2	16	21	+5	30	30	0	37	20	-17	27	21	-6	22	19	-3	21	21	0	29	22	-7	16	70	+54
E.R.B.	14	19	+5	32	34	+2	20	25	+5	19	20	+1	20	18	-2	21	20	-1	28	24	-4	26	17	-9	26	24	-2	35	34	-1	26	25	-1	20	22	+2	23	19	-4	28	21	-7	22	65	+43
P.J.C.	15	37	+22	31	55	+24	29	43	+14	19	27	+8	26	29	+3	24	33	+9	35	48	+13	25	38	+13	27	36	+9	33	38	+5	23	40	+17	23	30	+7	24	33	+9	28	38	+10	20	128	+108
W.C.D.	20	29	+9	36	48	+12	29	41	+12	18	27	+9	22	29	+7	28	29	+11	40	42	+2	28	35	+7	29	28	-1	29	37	+8	27	37	+10	22	28	+6	25	31	+6	30	39	+9	16	116	+100
J.S.F.	21	22	+1	35	41	+6	24	28	+4	24	24	0	27	32	+5	26	25	-1	43	44	+1	27	25	-2	28	32	+4	35	37	+2	28	29	+1	25	28	+3	28	28	0	29	31	+2	22	104	+82
R.M.G.	21	24	+3	32	43	+11	24	31	+7	17	24	+7	23	24	+1	22	26	+4	36	38	+2	27	26	-1	31	35	+4	35	35	0	26	30	+4	25	23	-2	22	20	-2	36	33	-3	19	89	+70
W.L.G.	20	17	-3	29	19	-10	24	23	-1	14	20	+6	18	18	0	17	16	-1	25	22	-3	15	17	+2	24	18	-6	26	24	-2	29	18	-11	21	17	-4	22	17	-5	27	21	-6	16	66	+50
J.H.	13	32	+19	25	53	+28	24	32	+8	21	29	+8	22	33	+11	15	35	+20	28	41	+13	19	34	+15	28	34	+6	25	41	+16	26	40	+14	15	35	+20	17	28	+11	14	40	+26	15	109	+94
D.L.H.	25	22	-3	31	34	+3	24	28	+4	23	22	-1	24	29	+5	21	24	+3	32	32	0	24	19	-5	25	29	+4	29	32	+3	23	27	+4	26	22	-4	24	22	-2	30	33	+3	18	76	+58
J.R.H.	22	21	-1	24	32	+8	30	23	-7	22	20	-2	26	31	+5	16	17	+1	32	27	-5	21	23	+2	23	29	+6	28	36	+8	28	27	-1	15	22	+7	19	21	+2	32	28	-4	16	78	+62
S.L.H.	21	30	+9	34	44	+10	21	32	+11	22	30	+8	31	34	+3	23	25	+2	38	34	-4	23	30	+7	29	33	+4	40	36	-4	28	30	+2	23	28	+5	26	25	-1	30	36	+6	24	130	+106
B.E.H.	19	21	+2	36	39	+3	30	31	+1	22	23	+1	30	32	+2	26	19	-7	38	42	+4	30	27	-3	33	30	-3	32	35	+3	31	30	-1	19	27	+8	0	26	+26	0	37	+37	0	99	+99
J.A.H.	16	17	+1	30	30	0	35	37	-8	17	22	+5	24	30	+6	23	24	+1	34	32	-2	24	26	+2	27	25	-2	34	34	0	28	29	+1	21	20	-1	24	20	-4	32	29	-3	22	140	+118

The names of the subjects are entered by their initials.

I denotes the results of the initial test.

F denotes the results of the final test.

D denotes the difference in the scores. The plus (+) sign indicates an increase over the initial score. The minus (-) sign indicates a loss.

*The numbers from 1 to 15 across the top of the table refer to the areas in the examination:

1. The Science of Child Study.
2. The Beginning of Life.
3. Anatomical and Physiological Development
4. Development of Motor Abilities.
5. Development of Communication.
6. Mental Development and Intelligence.
7. Development of Emotional Behavior.
8. Development of Meaning and Understanding.
9. Creative Activity and Play of Children.
10. The Dynamics of Children's Behavior.
11. Development of Social Behavior.
12. Character Development and Discipline.
13. The Development of Personality.
14. Mental Hygiene and the Developing Child.
15. Over-all View of the Field.

RAW DATA TABLE (Continued)

ANALYSIS OF TEST RESULTS BY AREAS ON THE CROW AND CROW EXAMINATION IN CHILD PSYCHOLOGY
EXPERIMENTAL GROUP
SUMMER 1954

Subjects	Areas Tested																																												
	1			2			3			4			5			6			7			8			9			10			11			12			13			14			15		
	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D
A.F.H.	18	24	+6	26	29	+3	26	29	+3	20	24	+4	30	25	-5	19	19	0	31	35	+4	15	23	+8	25	22	-3	31	24	-7	24	20	-4	20	19	-1	18	20	+2	28	23	-5	17	78	+70
W.J.	18	38	+20	27	47	+20	28	29	+1	25	20	-5	26	28	+2	17	20	+3	40	34	-6	24	26	+2	29	27	-2	36	33	-3	27	29	+2	23	29	+6	24	25	+1	33	34	+1	18	97	+79
K.E.K.	21	32	+11	39	51	+12	20	41	+21	20	32	+12	30	37	+7	27	30	+3	40	48	+8	22	36	+14	33	38	+5	36	36	0	34	38	+4	19	33	+14	31	33	+2	33	42	+9	20	97	+77
E.R.L.	16	19	+3	22	27	+5	29	26	-3	21	23	+2	25	30	+5	19	20	+1	34	29	-5	25	27	+2	23	27	+4	35	29	-6	27	29	+2	21	19	-2	25	23	-2	32	24	-8	21	82	+61
H.C.L.	16	15	-1	33	31	-2	22	21	-1	23	27	+4	25	24	-1	12	19	+7	26	29	+3	16	24	+8	20	28	+8	30	28	-2	28	26	-2	23	20	-3	22	21	-1	28	27	-1	21	67	+46
E.M.	23	27	+4	39	42	+3	29	30	+1	23	21	-2	31	30	-1	25	20	-5	41	41	0	25	26	+1	28	34	+6	39	39	0	29	25	-4	23	24	+1	25	23	-2	27	28	+1	21	100	+79
B.F.M.	21	27	+6	32	36	+4	26	30	+4	17	20	+3	22	28	+6	24	33	+9	33	36	+3	23	31	+8	24	32	+8	37	41	+4	26	34	+8	21	34	+13	24	29	+5	27	37	+10	17	133	+116
J.J.McM.	17	16	-1	30	33	+3	25	24	-1	14	20	+6	22	27	+5	23	20	-3	32	30	-2	21	14	-7	29	17	-12	27	29	+2	20	30	+10	21	17	-4	21	15	-6	21	17	-4	20	57	+37
N.H.M.	21	18	-3	36	32	-4	24	23	-1	24	22	-2	23	26	+3	22	20	-2	34	42	+8	23	30	+7	30	28	-2	37	32	-5	29	29	0	23	22	-1	22	30	+8	22	32	+10	22	89	+67
P.O.N.	20	18	-2	35	31	-4	24	25	+1	20	21	+1	28	29	+1	23	28	+5	29	32	+3	24	21	-3	25	26	+1	33	32	-1	17	28	+11	25	23	-2	22	26	+4	28	25	-3	18	85	+67
O.W.P.	22	37	+15	26	48	+22	23	27	+4	19	25	+6	21	26	+5	15	21	+6	24	31	+7	20	20	0	25	35	+10	31	26	-5	23	26	+3	12	22	+10	18	19	+1	26	28	+2	15	75	+60
M.L.P.	16	29	+13	36	42	+6	30	35	+5	26	24	-2	28	31	+3	25	35	+10	34	41	+7	24	32	+8	25	29	+4	29	39	+10	24	34	+10	19	34	+15	27	31	+4	32	39	+7	16	109	+93
M.P.P.	21	27	+6	45	37	-8	26	29	+3	24	21	-3	29	31	+2	24	24	0	38	37	-1	28	20	-8	32	32	0	38	37	-1	33	28	-5	22	23	+1	23	21	-2	30	36	+6	24	102	+78
J.J.R.	18	38	+20	41	51	+10	26	29	+3	26	22	-4	28	25	-3	25	27	+2	35	33	-2	25	27	+2	32	34	+2	35	35	0	29	28	-1	21	23	+2	20	21	+1	32	33	+1	21	86	+65
J.J.R.	21	36	+15	37	45	+8	29	31	+2	24	25	+1	24	28	+4	19	34	+15	36	41	+5	26	29	+3	24	36	+12	32	39	+7	25	41	+16	20	35	+15	22	30	+8	28	39	+11	18	113	+95
D.C.R.	22	26	+4	36	42	+6	29	30	+1	26	24	-2	24	29	+5	23	21	-2	34	36	+2	20	26	+6	29	26	-3	35	29	-6	26	29	+3	22	21	-1	27	29	+2	34	27	-7	22	102	+80
H.S.	17	23	+6	30	32	+2	27	28	+1	17	20	+3	25	33	+8	24	24	0	37	36	-1	22	23	+1	23	30	+7	33	32	-1	26	19	-7	18	16	-2	26	19	-7	28	27	-1	26	58	+32
W.J.S.	21	36	+15	26	37	+11	28	29	+1	24	22	-2	27	33	+6	23	19	-4	36	42	+6	25	24	-1	34	35	+1	31	32	+1	27	26	-1	23	22	-1	22	23	+1	32	34	+2	22	85	+63
D.L.S.	15	15	0	26	30	+4	20	28	+8	20	22	+2	25	24	-1	23	20	-3	30	26	-4	18	22	+4	24	27	+3	26	24	-2	25	26	+1	18	20	+2	23	24	+1	25	19	-6	17	61	+44
B.A.T.	18	20	+2	31	42	+11	33	33	0	22	22	0	33	27	-6	24	21	-3	36	38	+2	26	29	+3	27	33	+6	36	36	0	32	29	-3	22	25	+3	23	38	+15	31	28	-3	23	91	+68
C.J.V.	23	24	+1	40	39	-1	24	29	+5	25	21	-4	27	29	+2	25	23	-2	34	41	+7	25	22	-3	24	33	+9	33	31	-2	28	28	0	22	20	-2	23	23	0	32	30	-2	22	104	+82
B.J.W.	27	37	+10	39	55	+16	29	34	+5	28	28	0	29	36	+7	24	29	+5	40	46	+6	28	29	+1	34	33	-1	34	36	+2	29	30	+1	27	26	-1	23	28	+5	33	38	+5	23	117	+94

RAW DATA TABLE (Concluded)

ANALYSIS OF TEST RESULTS BY AREAS ON THE CROW AND CROW EXAMINATION IN CHILD PSYCHOLOGY
EXPERIMENTAL GROUP
SUMMER 1954

Subjects	Areas Tested														
	1			2			3			4			5		
	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D
H.G.W.	19	19	0	32	35	+3	24	22	-2	20	24	+4	19	26	+7
Total I Scores		780			1275			1042			845			1021	
Total F Scores		1029			1587			1192			949			1168	
Difference		249			312			150			104			147	

Subjects	Areas Tested														
	6			7			8			9			10		
	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D
H.G.W.	20	19	-1	28	28	0	20	23	+3	25	28	+3	21	30	+9
Total I Scores		853			1351			941			1095			1308	
Total F Scores		983			1444			1046			1204			1337	
Difference		130			93			105			109			29	

Subjects	Areas Tested														
	11			12			13			14			15		
	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D
H.G.W.	20	25	+5	19	20	+1	18	20	+2	28	25	+3	17	73	+55
Total I Scores		1067			851			864			1131			766	
Total F Scores		1176			967			994			1232			3776	
Difference		109			116			130			101			3010	

Total Results for Group

Initial 15190
Final 20084
Difference. . . . 4894

RAW DATA TABLE

ANALYSIS OF TEST RESULTS BY AREAS ON THE CROW AND CROW EXAMINATION IN CHILD PSYCHOLOGY
CONTROL GROUP
SUMMER 1954

Areas Tested*

Subjects	1			2			3			4			5		
	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D
R.M.B.	21	34	+13	39	53	+14	28	41	+13	24	30	+6	30	33	+3
B.N.B.	21	22	+1	33	40	+7	20	29	+9	23	24	+1	27	26	-1
C.B.	16	20	+4	38	37	-1	27	28	+1	20	25	+5	26	29	+3
M.L.C.	17	27	+10	27	32	+5	23	29	+6	20	23	+3	24	22	-2
D.H.C.	22	20	-2	25	38	+13	25	25	0	24	23	-1	25	33	+8
S.H.H.	22	25	+3	34	35	+1	25	29	+4	23	25	+2	33	34	+1
G.K.	14	17	+3	22	27	+5	20	27	+7	21	22	+1	28	29	+1
E.L.	18	37	+19	44	40	-4	24	37	+13	20	23	+3	28	23	-5
E.M.	17	18	+1	39	38	-1	29	27	-2	24	30	+6	34	33	-1
T.N.P.	20	37	+17	39	51	+12	23	31	+8	20	32	+12	30	39	+9
V.L.P.	13	22	+9	21	34	+13	22	26	+4	28	18	-10	25	28	+3
W.R.	19	22	+3	35	34	-1	19	23	+4	21	22	+1	28	25	-3
F.D.S.	19	37	+18	27	44	+17	25	33	+8	18	27	+9	24	32	+8
J.E.S.	17	33	+16	27	40	+13	20	23	+3	19	25	+6	26	24	-2
J.F.S.	18	24	+6	40	45	+5	25	28	+3	25	22	-3	26	34	+8

Subjects	6			7			8			9			10		
	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D
R.M.B.	23	29	+6	36	43	+7	26	28	+2	31	33	+2	29	36	+7
B.N.B.	21	27	+7	37	38	+1	21	21	0	30	29	-1	34	35	+1
C.B.	25	34	+9	34	36	+2	28	26	-2	32	30	-2	35	33	-2
M.L.C.	22	18	-4	35	31	-4	29	22	-7	27	23	-4	31	22	-9
D.H.C.	29	24	-5	37	34	-3	25	23	-2	30	28	-2	32	38	+6
S.H.H.	24	25	+1	42	42	0	30	27	-3	33	35	+2	31	37	+6
G.K.	24	21	-3	30	32	+2	24	25	+1	25	23	-2	34	27	-7
E.L.	25	25	0	35	34	-1	25	22	-3	29	25	-4	34	30	-4
E.M.	20	19	-1	36	32	-4	26	26	0	30	34	+4	33	34	+1
T.N.P.	21	30	+9	34	39	+5	25	28	+3	28	32	+4	34	31	-3
V.L.P.	20	28	+8	26	38	+12	27	28	+1	26	29	+3	32	30	-2
W.R.	23	22	-1	36	35	-1	23	21	-2	28	28	0	28	33	+5
F.D.S.	24	26	+2	35	35	0	21	28	+7	27	30	+3	26	29	+3
J.E.S.	21	23	+2	33	34	+1	25	25	0	31	31	0	31	33	+2
J.F.S.	28	26	-2	32	38	+6	22	27	+5	27	30	+3	30	32	+2

Subjects	11			12			13			14			15		
	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D
R.M.B.	23	35	+12	23	30	+7	22	25	+3	29	31	+2	23	129	+106
B.N.B.	28	21	+3	22	30	+8	23	21	-2	36	34	-2	22	97	+75
C.B.	32	33	+1	26	27	+1	25	25	0	32	30	-2	26	130	+104
M.L.C.	26	22	-4	21	22	+1	21	17	-4	27	28	+1	16	68	+52
D.H.C.	34	28	-6	21	30	-1	24	22	-2	31	29	-2	22	84	+62
S.H.H.	28	29	+1	25	29	+4	25	27	+2	32	33	+1	23	100	+77
G.K.	26	29	+3	23	22	-1	19	21	+2	24	25	+1	0	15	+15
E.L.	28	28	0	26	24	-2	22	23	+1	24	34	+10	25	117	+92
E.M.	26	26	0	21	19	-2	25	19	-6	26	33	+7	0	96	+96
T.N.P.	30	30	0	22	22	0	20	22	+2	30	30	0	24	94	+70
V.L.P.	25	24	-1	20	23	+3	14	20	+6	19	32	+23	0	90	+90
W.R.	28	26	-2	25	19	-6	28	24	-4	30	32	+2	16	90	+74
F.D.S.	26	32	+6	18	25	+7	21	22	+1	24	27	+3	16	95	+79
J.E.S.	25	32	+7	24	21	-3	26	21	-5	31	36	+5	20	95	+75
J.F.S.	29	29	0	23	26	+3	20	25	+5	30	35	+5	0	92	=92

The names of the subjects are entered by their initials.

I denotes the results of the initial test.

F denotes the results of the final test.

D denotes the difference in the scores. The plus (+) sign indicates an increase over the initial score. The minus (-) sign indicates a loss.

*The numbers from 1 to 15 across the top of the table refer to the areas in the examination:

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8. Development of Meaning and Understanding.
9. Creative Activity and Play of Children.
10. The Dynamics of Children's Behavior.
11. Development of Social Behavior.
12. Character Development and Discipline.
13. The Development of Personality.
14. Mental Hygiene and the Developing Child.
15. Over-all View of the Field.

RAW DATA TABLE (Concluded)

ANALYSIS OF TEST RESULTS BY AREAS ON THE CROW AND CROW EXAMINATION IN CHILD PSYCHOLOGY
CONTROL GROUP
SUMMER 1954

Subjects	Areas Tested														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	I F D	I F D	I F D	I F D	I F D	I F D	I F D	I F D	I F D	I F D	I F D	I F D	I F D	I F D	I F D
Total I Scores	272	490	355	330	414	350	471	377	434	474	414	340	335	415	233
Total F Scores	395	588	436	371	444	377	540	377	440	480	434	359	334	469	1392
Difference	123	98	81	41	30	27	69	0	6	6	20	19	-1	54	1159

Total Results for Group

Initial. 5704
Final. 7436
Difference 1732

RAW DATA TABLE

ANALYSIS OF TEST RESULTS BY AREAS ON THE CROW AND CROW EXAMINATION IN CHILD PSYCHOLOGY
EXPERIMENTAL GROUP
FALL 1954-1955

Areas Tested*

Subjects	1 I	1 F	1 D	2 I	2 F	2 D	3 I	3 F	3 D	4 I	4 F	4 D	5 I	5 F	5 D
N.H.A.	20	23	+3	42	43	+1	30	28	-2	23	26	+3	28	30	+2
J.A.	14	15	+1	28	33	+5	28	26	-2	20	22	+2	26	27	+1
B.B.	20	19	-1	31	30	-1	22	23	+1	23	22	-1	19	27	+8
H.Z.B.	13	20	+7	28	32	+4	23	32	+9	20	23	+3	23	20	-3
D.B.	15	14	-1	30	23	-7	23	22	-1	23	27	+4	18	23	+5
H.A.C.	18	37	+9	25	48	+13	24	33	+9	21	19	-2	28	30	+2
R.C.	19	18	-1	31	35	+4	23	21	-2	20	18	-2	29	30	+1
J.A.C.	18	37	+19	35	42	+7	21	31	+10	16	29	+13	23	34	+11
F.D.G.	21	21	0	29	32	+3	20	25	+5	19	20	+1	19	22	+3
H.D.C.	17	17	0	25	30	+5	26	28	+2	21	23	+2	26	25	-1
M.B.C.	21	22	+1	32	37	+5	27	24	-3	24	23	-1	27	30	+3
H.J.C.	23	17	-6	27	36	+9	21	24	+3	18	25	+7	22	25	+3
E.C.	20	22	+2	39	40	+1	28	24	-4	18	20	+2	28	31	+3
J.F.D.	16	31	+15	36	41	+5	17	29	+12	18	23	+5	20	27	+7
M.K.D.	14	19	+5	17	34	+17	16	25	+9	21	21	0	22	26	+4
R.R.D.	17	22	+5	35	37	+2	25	28	+3	18	29	+11	29	35	+6

Subjects	6 I	6 F	6 D	7 I	7 F	7 D	8 I	8 F	8 D	9 I	9 F	9 D	10 I	10 F	10 D
N.H.A.	25	24	-1	39	32	-7	30	31	+1	29	29	0	40	36	-4
J.A.	20	17	+3	33	32	-1	24	28	+4	28	30	+2	30	30	0
B.B.	24	25	+1	22	22	0	22	15	-7	19	23	+4	24	21	-3
H.Z.B.	19	24	+5	28	34	+6	17	23	+6	25	19	-6	28	36	+8
D.B.	16	21	+5	25	34	+9	28	20	-8	21	24	+3	21	24	+3
H.A.C.	21	26	+5	24	39	+15	28	17	+11	26	28	+2	27	27	0
R.C.	18	22	+4	36	33	-3	20	23	+3	22	23	+1	25	27	+2
J.A.C.	24	27	+3	30	37	+7	22	26	+4	22	28	+6	27	33	+6
F.D.G.	19	20	+1	26	32	+6	16	19	+3	19	26	+7	26	20	-6
H.D.C.	24	22	-2	29	29	0	26	21	-5	24	25	+1	23	28	+5
M.B.C.	20	17	-3	35	38	+3	24	22	-2	27	31	+4	33	40	+7
H.J.C.	20	20	0	35	32	-3	24	25	+1	27	26	-1	24	27	+3
E.C.	27	20	-7	35	38	+3	23	26	+3	31	34	+3	36	30	-6
J.F.D.	20	20	0	27	38	+11	13	27	+14	21	21	0	23	24	+1
M.K.D.	13	15	+2	29	41	+12	23	27	+4	28	35	+7	33	30	-3
R.R.D.	23	30	+7	40	43	+3	25	27	+2	28	29	+1	33	38	+5

Subjects	11 I	11 F	11 D	12 I	12 F	12 D	13 I	13 F	13 D	14 I	14 F	14 D	15 I	15 F	15 D
N.H.A.	27	28	+1	28	27	-1	24	24	0	34	40	+6	99	100	+1
J.A.	29	28	-1	18	18	0	21	26	+5	27	31	+4	72	84	+12
B.B.	21	28	+7	20	23	+3	16	19	+3	23	26	+3	79	65	-14
H.Z.B.	20	30	+10	17	22	+5	17	22	+5	16	24	+8	77	87	+10
D.B.	25	25	0	16	15	-1	18	17	-1	25	23	-2	64	71	+7
H.A.C.	25	23	-2	22	24	+2	23	19	-4	28	26	-2	75	87	+12
R.C.	25	27	+2	20	23	+3	23	22	-1	21	23	+2	65	80	+15
J.A.C.	23	27	+4	20	21	+1	22	20	-2	27	25	-2	80	119	+39
F.D.G.	23	17	-6	17	21	+4	18	26	+8	25	24	-1	79	62	-17
H.D.C.	28	26	-2	23	19	-4	22	22	0	29	29	0	67	76	+9
M.B.C.	27	30	+3	21	21	0	22	24	+2	32	29	-3	102	110	+8
H.J.C.	24	24	0	21	21	0	23	26	+3	29	33	+4	87	85	-2
E.C.	26	29	+3	21	24	+3	25	25	0	33	40	+7	94	92	-2
J.F.D.	29	21	-8	21	23	+2	17	22	+5	26	27	+1	59	82	+23
M.K.D.	22	29	+7	20	24	+4	19	24	+5	16	32	+16	72	103	+31
R.R.D.	28	31	+3	22	22	0	26	26	0	31	33	+2	88	116	+28

The names of the subjects are entered by their initials.

I denotes the results of the initial test.

F denotes the results of the final test.

D denotes the difference in the scores. The plus (+) sign indicates an increase over the initial score. The minus (-) sign indicates a loss.

*The numbers from 1 to 15 across the top of the table refer to the areas in the examination:

1. The Science of Child Study.
2. The Beginning of Life.
3. Anatomical and Physiological Development.
4. Development of Motor Abilities.
5. Development of Communication.
6. Mental Development and Intelligence.
7. Development of Emotional Behavior.
8. Development of Meaning and Understanding.
9. Creative Activity and Play of Children.
10. The Dynamics of Children's Behavior.
11. Development of Social Behavior.
12. Character Development and Discipline.
13. The Development of Personality.
14. Mental Hygiene and the Developing Child.
15. Over-all View of the Field.

RAW DATA TABLE (Continued)

ANALYSIS OF TEST RESULTS BY AREAS ON THE CROW AND CROW EXAMINATION IN CHILD PSYCHOLOGY
EXPERIMENTAL GROUP
FALL 1954-1955

Subjects	Areas Tested 1			2			3			4			5			6			7			8			9			10			11			12			13			14			15		
	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D
E.W.D.	19	21	+2	28	38	+10	28	29	+1	22	25	+3	26	32	+6	23	25	+2	32	37	+5	20	24	+4	28	32	+4	31	33	+2	24	28	+4	23	22	-1	21	26	+5	27	34	+7	105	104	-1
W.F.	17	37	+20	37	47	+10	26	35	+9	23	28	+5	30	32	+2	28	32	+4	39	46	+7	28	33	+5	28	38	+10	35	41	+6	23	39	+16	24	35	+11	27	33	+6	38	43	+5	101	147	+46
R.G.	12	31	+19	25	41	+16	24	23	-1	15	18	+3	17	25	+8	19	19	0	33	26	-7	20	15	-5	25	26	+1	25	23	-2	22	16	-6	22	22	0	22	16	-6	29	27	-2	89	88	-1
M.J.G.	17	19	+2	29	35	+6	20	30	+10	23	22	-1	28	29	+1	21	24	+3	31	37	+6	23	27	+4	31	30	-1	34	38	+4	27	27	0	26	22	-4	23	23	0	31	34	+3	90	89	-1
K.E.G.	19	35	+16	27	37	+10	20	29	+9	20	24	+4	26	20	-6	16	19	+3	31	26	-5	26	21	-5	23	23	0	29	30	+1	18	20	+2	14	22	+8	17	21	+4	22	28	+6	72	93	+21
F.G.H.	17	27	+10	30	40	+10	30	31	+1	20	25	+5	28	28	0	20	22	+2	31	35	+4	25	25	0	28	32	+4	33	30	-3	28	28	0	22	22	0	23	24	+1	29	33	+4	85	88	+3
R.D.H.	19	20	+1	36	41	+5	24	28	+4	17	17	0	30	29	-1	19	24	+5	34	42	+8	29	26	-3	26	29	+3	34	25	-9	28	32	+4	23	24	+1	24	25	+1	33	31	-2	84	99	+15
A.H.	18	20	+2	24	33	+9	25	27	+2	20	26	+6	29	25	-4	20	25	+5	19	29	+10	19	23	+4	20	23	+3	26	29	+3	23	29	+6	18	19	+1	16	20	+4	24	21	-3	74	68	-6
C.H.	16	15	-1	28	32	+4	24	24	0	22	21	-1	27	30	+3	23	21	-2	31	37	+6	24	29	+5	27	27	0	34	33	-1	26	26	0	20	21	+1	22	24	+2	27	24	-3	79	79	0
M.J.J.	18	41	+23	38	54	+16	24	36	+12	25	33	+1	27	36	+9	22	39	+17	35	48	+13	31	40	+9	26	39	+13	29	43	+14	31	43	+12	19	33	+14	25	32	+7	25	45	+20	83	145	+62
L.E.K.	16	18	+2	29	34	+5	20	22	+2	18	20	+2	25	29	+4	23	18	-5	29	32	+3	26	23	-3	24	26	+2	30	27	-3	21	28	+7	16	22	+6	22	25	+3	29	27	-2	66	70	+4
M.M.K.	19	21	+2	30	39	+9	25	26	+1	24	22	-2	27	31	+4	25	21	-4	37	42	+5	25	28	+3	29	31	+2	33	34	+1	28	28	0	26	24	-2	21	24	+3	33	30	-3	97	97	0
J.H.L.	18	18	0	32	35	+3	19	21	+2	16	24	+8	24	27	+3	21	20	-1	33	32	-1	22	26	+4	27	29	+2	32	26	-6	18	26	+8	19	21	+2	24	21	-3	30	27	-3	91	86	-5
E.C.L.	19	19	0	37	39	+2	21	31	+10	19	25	+6	24	29	+5	23	26	+3	41	37	-4	28	30	+2	30	32	+2	34	36	+2	29	27	-2	22	25	+3	25	25	0	34	33	-1	107	113	+6
D.T.L.	20	22	+2	36	43	+7	21	27	+6	21	25	+4	29	31	+2	22	26	+4	45	40	-5	26	30	+4	29	34	+5	32	30	-2	32	31	-1	25	23	-2	27	26	-1	33	38	+5	108	103	-5
Z.McC.L.	18	16	-2	32	33	+1	26	27	+1	17	21	+4	29	28	-1	25	26	+1	36	42	+6	23	23	0	28	32	+4	34	32	-2	26	25	-1	19	27	+8	23	24	+1	27	32	+5	89	98	+9
N.L.	16	18	+2	33	32	-1	24	27	+3	19	18	-1	23	22	-1	16	20	+4	33	31	-2	17	23	+6	24	26	+2	26	26	0	24	27	+3	26	25	-1	19	25	+6	26	30	+4	73	80	+7
O.D.McA.	22	19	-2	37	43	+6	26	30	+4	22	23	+1	26	29	+3	24	22	-2	37	39	+2	33	21	-12	29	30	+1	31	32	+1	26	23	-3	24	22	-2	23	25	+2	29	30	+1	91	95	+4
D.McD.	16	17	+1	32	33	+1	23	26	+3	18	19	+1	23	28	+5	16	19	+3	39	39	0	25	22	-3	27	29	+2	37	35	-2	27	26	-1	22	29	+7	23	22	-1	27	33	+6	89	116	+27
N.M.M.	14	19	+5	23	33	+10	19	22	+3	21	15	-6	25	24	-1	20	21	+1	26	30	+4	24	21	-3	23	26	+3	29	34	+5	25	23	-2	16	19	+3	18	22	+4	25	26	+1	77	66	-11
R.M.	15	22	+7	29	35	+6	25	23	-2	18	22	+4	24	26	+2	20	21	+1	33	35	+2	20	23	+3	29	30	+1	32	32	0	25	26	+1	19	23	+4	27	24	-3	27	29	+2	82	103	+21
J.B.M.	12	17	+5	25	30	+5	19	23	+4	23	24	+1	25	25	0	24	22	-1	25	21	-4	21	26	+5	22	22	0	24	25	+1	23	23	0	22	17	-5	20	19	-1	29	28	-1	76	81	+5

RAW DATA TABLE (Continued)

ANALYSIS OF TEST RESULTS BY AREAS ON THE CROW AND CROW EXAMINATION IN CHILD PSYCHOLOGY
EXPERIMENTAL GROUP
FALL 1954-1955

Areas Tested

Subjects	1			2			3			4			5		
	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D
D.L.N.	18	21	+3	30	32	+2	24	27	+3	22	24	+2	27	28	+1
M.J.O.	17	23	+6	43	43	0	20	27	+7	18	22	+4	29	33	+4
L.O.P.	18	18	0	28	27	-1	22	21	-1	20	18	-2	23	27	+4
D.J.P.	16	19	+3	30	38	+8	27	32	+5	21	23	+2	30	27	-3
J.A.P.	17	15	-2	32	36	+4	22	26	+4	17	20	+3	25	29	+4
G.R.R.	15	19	+4	20	30	+10	18	24	+6	10	16	+6	20	30	+10
K.S.	22	22	0	39	41	+2	32	30	-2	23	24	+1	29	27	-2
B.C.S.	12	13	+1	26	25	-1	22	24	+2	13	23	+10	23	25	+2
J.D.S.	19	17	-2	26	32	+6	20	22	+2	19	22	+3	26	22	-4
B.S.	21	21	0	32	40	+8	25	26	+1	22	19	-3	26	25	-1
W.E.S.	22	19	-3	26	33	+7	24	23	-1	23	18	-5	25	18	-7
G.J.S.	15	19	+4	30	34	+4	21	24	+3	26	17	-9	31	28	-3
J.C.S.	20	20	0	34	38	+4	32	30	-2	20	19	-1	28	32	+4
A.M.T.	19	23	+4	35	40	+5	23	30	+7	25	25	0	26	29	+3
J.H.T.	19	38	+19	30	45	+15	30	41	+11	19	31	+12	26	31	+5
A.B.T.	21	23	+2	36	42	+6	25	26	+1	23	25	+2	29	29	0
H.W.T.	14	17	+3	19	28	+9	13	25	+12	12	16	+4	15	24	+9
B.W.T.	20	22	+2	42	38	-4	31	23	-8	27	21	-6	28	27	-1
P.A.T.	18	19	+1	40	34	-6	25	31	+6	19	22	+3	29	33	+4
J.W.	20	19	-1	27	36	+9	18	22	+4	17	26	+9	18	24	+6
N.W.	18	21	+3	35	37	+2	22	24	+2	24	22	-2	28	33	+5
D.H.W.	16	19	+3	17	38	+21	8	30	+22	8	21	+13	20	31	+11

Subjects	6			7			8			9			10		
	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D
D.L.N.	15	18	+3	26	25	-1	17	22	+5	24	15	-9	27	23	-4
M.J.O.	23	25	+2	41	41	0	23	23	0	29	32	+3	39	30	-9
L.O.P.	20	20	0	33	33	0	22	25	+3	24	23	-1	30	33	+3
D.J.P.	24	25	+1	34	37	+3	22	27	+5	28	28	0	37	41	+4
J.A.P.	20	22	+2	25	35	+10	23	23	0	27	29	+2	29	30	+1
G.R.R.	18	20	+2	33	35	+2	18	18	0	29	24	-5	30	30	0
K.S.	30	28	-2	40	41	+1	27	28	+1	30	28	-2	33	35	+2
B.C.S.	15	17	+2	26	32	+6	18	25	+7	21	24	+3	22	28	+6
J.D.S.	20	15	-5	24	30	+6	19	20	+1	23	26	+3	26	27	+1
B.S.	21	21	0	34	36	+2	22	21	-1	30	28	-2	33	37	+4
W.E.S.	26	19	-7	33	37	+4	24	22	-2	28	26	-2	33	34	+1
G.J.S.	21	30	+9	35	36	+1	27	28	+1	29	30	+1	31	37	+6
J.C.S.	21	20	-1	37	41	+4	30	29	-1	29	30	+1	41	38	-3
A.M.T.	20	23	+3	36	37	+1	24	23	-1	28	33	+5	27	36	+9
J.H.T.	21	35	+14	37	45	+8	30	47	+17	25	47	+22	33	39	+6
A.B.T.	27	20	-7	37	41	+4	25	27	+2	30	34	+4	34	32	-2
H.W.T.	19	24	+5	25	31	+6	24	24	0	23	30	+7	26	32	+6
B.W.T.	28	23	-5	40	41	+1	22	23	+1	28	29	+1	38	38	0
P.A.T.	21	23	+2	33	37	+4	27	26	-1	25	29	+4	31	33	+2
J.W.	20	27	+7	33	36	+3	22	22	0	27	26	-1	35	32	-3
N.W.	27	22	-5	41	40	-1	27	27	0	26	33	+7	34	34	0
D.H.W.	18	26	+8	31	39	+8	14	26	+12	25	32	+7	30	30	0

Subjects	11			12			13			14			15		
	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D
D.L.N.	35	23	-12	17	16	-1	19	19	0	28	25	-3	73	103	+30
M.J.O.	27	30	+3	24	26	+2	22	26	+4	31	37	+6	98	123	+25
L.O.P.	25	27	+2	15	18	+3	24	23	-1	26	27	+1	76	79	+3
D.J.P.	31	29	-2	20	22	+2	24	24	0	30	29	-1	83	112	+29
J.A.P.	25	30	+5	21	25	+4	22	22	0	25	29	+4	90	80	-7
G.R.R.	25	25	0	20	20	0	17	21	+4	24	29	+5	77	81	+4
K.S.	30	31	+1	28	25	-3	23	26	+3	33	33	0	98	104	+6
B.C.S.	21	28	+7	15	19	+4	21	24	+3	23	19	-4	62	62	0
J.D.S.	26	26	0	22	23	+1	22	21	-1	24	23	-1	71	65	-6
B.S.	25	28	+3	22	24	+2	16	22	+6	33	32	-1	83	97	+14
W.E.S.	27	30	+3	22	23	+1	26	21	-5	30	29	-1	90	80	-10
G.J.S.	25	22	-3	19	22	+3	23	28	+5	30	35	+5	93	105	+12
J.C.S.	31	31	0	26	28	+2	24	25	+1	33	36	+3	94	100	+6
A.M.T.	28	29	+1	25	27	+2	20	24	+4	33	33	0	105	111	+6
J.H.T.	29	30	+1	24	31	+7	20	28	+8	28	37	+9	92	123	+31
A.B.T.	29	29	0	23	24	+1	26	24	-2	29	31	+2	104	100	-4
H.W.T.	23	30	+7	20	17	-3	25	21	-4	22	26	+4	75	66	-9
B.W.T.	28	28	0	25	24	-1	22	26	+4	29	32	+3	95	102	+7
P.A.T.	27	27	0	22	23	+1	25	22	-3	29	33	+4	89	98	+9
J.W.	24	26	+2	17	17	0	20	23	+3	22	29	+7	82	76	-6
N.W.	28	26	-2	31	25	-6	21	19	-2	29	31	+2	96	110	+14
D.H.W.	25	26	+1	20	29	+9	16	19	+3	22	31	+9	79	97	+18

RAW DATA TABLE (Concluded)

ANALYSIS OF TEST RESULTS BY AREAS ON THE CROW AND CROW EXAMINATION IN CHILD PSYCHOLOGY
EXPERIMENTAL GROUP
FALL 1954-1955

Subjects	Areas Tested														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	I F D	I F D	I F D	I F D	I F D	I F D	I F D	I F D	I F D	I F D	I F D	I F D	I F D	I F D	I F D
Total I Scores	1060	1854	1391	1194	1520	1279	1957	1407	1568	1836	1550	1262	1306	1669	5069
Total F Scores	1293	2187	1008	1341	1669	1365	2143	1492	1763	1894	1635	1375	1398	1814	5604
Difference	233	333	217	147	149	86	186	85	195	58	85	113	92	145	535

Total Results for Group

Initial 25922
Final 28581
Difference. . . 2659

RAW DATA TABLE

ANALYSIS OF TEST RESULTS BY AREAS ON THE CROW AND CROW EXAMINATION IN CHILD PSYCHOLOGY
CONTROL GROUP
FALL 1954-1955

Subjects	Areas Tested* 1			2			3			4			5			6			7			8			9			10			11			12			13			14			15		
	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D
D.B.	21	15	-6	32	24	-8	31	0	-31	22	0	-22	27	0	-27	25	0	-25	38	0	-38	24	0	-24	26	0	-26	29	0	-29	24	0	-24	17	0	-17	22	0	-22	22	0	-22	72	0	-72
D.L.B.	13	16	+3	25	29	+4	25	22	-3	17	25	+8	17	18	+1	19	25	+6	19	33	+14	21	23	+2	23	28	+5	20	30	+10	21	22	+1	15	20	+5	18	17	-1	20	25	+5	52	62	+10
J.C.B.	21	25	+4	26	28	+2	26	19	-7	10	20	+10	18	28	+10	20	22	+2	27	28	+1	16	25	+9	26	28	+2	29	25	-4	25	18	-7	21	21	0	23	20	-3	26	21	-5	80	91	+11
C.W.C.	14	20	+6	17	29	+12	23	22	-1	21	19	-2	20	26	+6	20	32	+12	25	37	+12	16	23	+7	23	30	+7	25	28	+3	19	18	-1	16	25	+9	12	25	+13	22	26	+4	65	93	+28
P.O.C.	15	17	+2	15	24	+9	2	21	+19	7	20	+13	16	27	+11	12	20	+8	25	36	+9	4	22	+18	24	0	-24	34	0	-34	26	0	-26	20	0	-20	18	0	-18	18	0	-18	55	0	-55
H.Del.	10	18	+8	28	29	+1	22	23	+1	15	24	+9	17	26	+9	16	19	+3	23	23	0	19	22	+3	23	26	+3	28	31	+3	25	22	-3	21	15	-6	19	15	-4	25	22	-3	76	72	-4
T.D.	18	22	+4	26	37	+11	23	22	-1	21	20	-1	26	26	0	22	21	-1	30	30	0	17	11	-6	26	14	-12	19	23	+4	16	22	+6	20	15	-5	18	16	-2	16	20	+4	63	75	+12
J.A.E.	18	12	-6	29	32	+3	24	19	-5	18	21	+3	28	26	-2	22	23	+1	33	27	-6	21	30	+9	20	23	+3	23	25	+2	26	23	-3	22	23	+1	19	21	+2	26	27	+1	79	85	+6
A.D.E.	18	20	+2	30	28	-2	23	21	-2	19	22	+3	29	27	-2	18	18	0	30	32	+2	18	18	0	22	25	+3	28	31	+3	25	23	-2	23	19	-4	17	18	+1	26	20	-6	76	73	-3
P.G.E.	20	28	+8	28	35	+7	28	30	+2	23	26	+3	30	35	+5	17	26	+9	40	39	-1	24	33	+9	32	35	+3	35	34	-1	27	32	+5	19	26	+7	24	25	+1	29	30	+1	99	105	+6
M.L.G.	23	17	-6	29	31	+2	22	24	+2	20	24	+4	26	26	0	22	24	+2	37	40	+3	25	28	+3	28	29	+1	37	32	-5	24	29	+5	23	23	0	23	22	-1	35	25	-10	95	95	0
R.J.G.	15	20	+5	29	29	0	24	26	+2	20	19	-1	26	29	+3	23	20	-3	32	34	+2	21	21	0	27	27	0	33	36	+3	23	27	+4	19	0	-19	23	0	-23	32	0	-32	67	0	-67
L.W.H.	19	22	+3	31	38	+7	29	29	0	17	22	+5	27	29	+2	20	24	+4	35	38	+3	26	22	-4	22	28	+6	34	32	-2	27	26	-1	26	26	0	23	25	+2	23	21	-2	68	69	+1
A.L.H.	23	23	0	43	45	+2	31	27	-4	15	21	+6	32	28	-4	25	25	0	36	39	+3	27	27	0	34	31	-3	36	34	-2	24	24	0	23	25	+2	22	26	+4	34	25	-9	103	100	-3
P.W.H.	23	19	-4	39	42	+3	25	24	-1	19	23	+4	32	32	0	23	26	+3	37	35	-2	32	27	-5	30	32	+2	35	36	+1	28	25	-3	27	25	-2	20	24	+4	35	36	+1	94	92	-2
B.J.H.	15	18	+3	32	27	-5	21	23	+2	16	23	+7	22	18	-4	20	23	+3	29	33	+4	21	18	-3	28	30	+2	34	27	-7	27	25	-2	17	20	+3	23	20	-3	26	21	-5	73	89	+16
E.H.	18	17	-1	31	36	+5	28	22	-6	24	24	0	25	24	-1	17	25	+8	22	31	+9	18	27	+9	23	31	+8	28	32	+4	25	24	-1	22	23	+1	20	25	+5	24	30	+6	65	94	+29

The names of the subjects are entered by their initials.

I denotes the results of the initial test.

F denotes the results of the final test.

D denotes the difference in the scores. The plus (+) sign indicates an increase over the initial score. The minus (-) sign indicates a loss.

*The numbers from 1 to 15 across the top of the table refer to the areas in the examination.

1. The Science of Child Study.
2. The Beginning of Life.
3. Anatomical and Physiological Development.
4. Development of Motor Abilities.
5. Development of Communication.
6. Mental Development and Intelligence.
7. Development of Emotional Behavior.
8. Development of Meaning and Understanding.
9. Creative Activity and Play of Children.
10. The Dynamics of Children's Behavior.
11. Development of Social Behavior.
12. Character Development and Discipline.
13. The Development of Personality.
14. Mental Hygiene and the Developing Child.
15. Over-all View of the Field

RAW DATA TABLE (Continued)

ANALYSIS OF TEST RESULTS BY AREAS ON THE CROW AND CROW EXAMINATION IN CHILD PSYCHOLOGY
CONTROL GROUP
FALL 1954-1955

Subjects	Areas Tested																																												
	1			2			3			4			5			6			7			8			9			10			11			12			13			14			15		
	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D
A.J.H.	18	22	+4	28	33	+5	23	25	+2	21	20	−1	24	30	+6	24	17	−7	35	35	0	25	27	+2	28	29	+1	28	36	+8	29	23	−6	23	21	−2	21	20	−1	30	32	+2	83	90	+7
E.D.H.	21	25	+4	36	40	+4	28	29	+1	24	21	−3	29	30	+1	25	22	−3	35	39	+4	24	21	−3	25	34	+9	33	35	+2	28	25	−3	23	22	−1	29	28	−1	28	34	+6	86	106	+20
L.M.J.	21	22	+1	34	29	−5	26	29	+3	23	24	+1	27	32	+5	19	24	+5	39	38	−1	24	29	+5	31	32	+1	31	32	+1	30	32	+2	23	21	−2	23	22	−1	30	31	+1	102	106	+4
R.K.	21	31	+10	29	38	+9	30	39	+9	20	32	+12	21	38	+17	21	34	+13	30	48	+18	25	37	+12	30	38	+8	32	40	+8	19	41	+22	19	33	+14	23	34	+11	24	42	+18	65	137	+73
M.R.L.	9	14	+5	27	29	+2	25	25	0	19	23	+4	23	22	−1	20	19	−1	27	23	−4	23	21	−2	22	21	−1	29	31	+2	20	23	+3	19	22	+3	24	26	+2	28	26	−2	63	54	−9
J.B.L.	20	23	+3	36	40	+4	25	27	+2	19	22	+3	26	25	−1	24	25	+1	36	42	+6	25	21	−4	33	33	0	35	38	+3	30	34	+4	25	26	+1	22	25	+3	36	35	−1	89	102	+13
G.L.	18	21	+3	27	29	+2	19	24	+5	23	22	−1	23	26	+3	24	21	−3	29	25	−4	19	18	−1	24	22	−2	23	25	+2	24	27	+3	20	21	+1	24	21	−3	25	24	−1	69	62	−7
C.E.L.	14	16	+2	25	24	−1	26	18	−8	19	16	−3	26	21	−5	23	23	0	32	21	−11	21	19	−2	25	14	−11	28	26	−2	28	25	−3	19	20	+1	21	16	−5	24	15	−9	67	49	−18
D.M.	17	21	+4	37	36	−1	24	27	+3	19	20	+1	28	25	−3	22	21	−1	30	26	−4	23	24	+1	28	26	−2	32	23	−9	25	23	−2	10	19	+3	21	18	−3	30	24	−6	76	64	−12
B.McC.	19	23	+4	33	42	+9	26	24	−2	20	21	+1	31	26	−5	23	21	−2	36	36	0	26	20	−6	29	17	−12	21	19	−2	30	20	−10	18	19	+1	15	17	+2	16	17	+1	61	60	−1
D.McK.	19	24	+5	25	29	+4	17	23	+6	26	21	−5	27	25	−2	19	23	+4	37	32	−5	21	25	+4	25	28	+3	26	29	+3	26	20	−6	21	25	+4	16	26	+10	27	24	−3	36	91	+55
E.M.	19	22	+3	31	33	+2	26	31	+5	22	23	+1	25	30	+5	25	25	0	36	37	+1	29	32	+3	30	29	−1	36	32	−4	29	29	0	20	23	+3	26	24	−2	35	33	−2	97	96	−1
M.A.M.	13	13	0	30	35	+5	30	27	−3	16	25	+9	27	24	−3	16	20	+4	37	35	−2	26	29	+3	26	25	−1	36	36	0	21	24	+3	19	23	+4	18	22	+4	25	27	+2	84	88	+4
N.M.	13	13	0	27	32	+5	23	23	0	12	17	+5	18	21	+3	19	18	−1	26	24	−2	14	19	+5	17	23	+6	22	22	0	22	23	+1	15	18	+3	11	17	+6	23	21	−2	66	59	−7
H.N.	22	29	+7	43	43	0	29	30	+1	22	23	+1	31	30	−1	21	28	+7	37	43	+6	27	32	+5	31	36	+5	37	37	0	30	30	0	19	29	+10	26	24	−2	32	35	+3	98	110	+12
J.V.P.	9	29	+20	23	26	+3	28	23	−5	17	17	0	19	32	+13	17	22	+5	24	28	+14	20	31	+11	15	27	+12	19	37	+18	24	33	+9	18	26	+8	13	24	+11	24	33	+9	59	113	+54
J.P.	19	21	+2	32	36	+4	26	30	+4	20	19	−1	27	30	+3	25	19	−6	37	36	−1	26	22	−4	28	30	+2	35	30	−5	29	29	0	22	24	+2	22	25	+3	30	25	−5	86	80	−6
P.L.P.	24	33	+9	26	49	+23	27	28	+1	26	24	−2	29	38	+9	25	34	+9	39	48	+9	26	40	+14	34	40	+6	35	40	+5	28	43	+15	27	32	+5	25	34	+9	31	25	−6	92	135	+45
J.W.P.	20	13	−7	25	23	−2	24	21	−3	23	19	−4	21	26	+5	14	32	+18	30	32	+2	24	16	−8	26	17	−9	19	18	−1	22	21	−1	17	21	+4	17	15	−2	25	19	−6	64	61	−3
T.W.P.	19	27	+8	32	36	+4	20	29	+9	19	24	+5	26	29	+3	22	25	+3	37	39	+2	23	30	+7	29	29	0	35	37	+2	29	31	+2	26	28	+2	22	24	+2	34	36	+2	88	107	+19
N.J.P.	18	25	+7	31	31	0	23	23	0	19	27	+6	28	31	+3	24	24	0	32	23	−9	19	20	+1	30	31	+1	32	32	0	28	26	−2	19	23	+4	24	23	−1	32	33	+1	89	93	+4
M.R.	14	16	+2	19	24	+5	29	22	−7	18	24	+6	26	24	−2	14	24	+10	33	16	−17	24	24	0	24	27	+3	26	27	+1	19	24	+5	17	18	+1	19	21	+2	25	31	+6	71	71	0

RAW DATA TABLE (Concluded)

ANALYSIS OF TEST RESULTS BY AREAS ON THE CROW AND CROW EXAMINATION IN CHILD PSYCHOLOGY
CONTROL GROUP
FALL 1954-1955

Areas Tested

Subjects	1			2			3			4			5		
	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D
J.W.S.	18	15	-3	29	27	-2	25	23	-2	16	14	-2	18	17	-1
R.E.S.	17	18	+1	27	36	+9	29	21	-8	21	18	-3	22	21	-1
C.S.	20	14	-6	30	31	+1	29	24	-5	22	18	-4	27	29	+2
J.C.S.	17	23	+6	31	36	+5	30	29	-1	18	18	0	25	23	-2
E.S.	17	17	0	32	32	0	25	24	-1	14	17	+3	30	26	-4
J.C.W.	14	16	+2	22	28	+6	18	23	+5	20	25	+5	24	27	+3
F.G.W.	17	21	+4	39	37	-2	25	22	-3	22	18	-4	27	26	-1
Total I Scores		811			1356			1142			884			1153	
Total F Scores		913			1507			1117			965			1209	
Difference		102			151			-25			81			56	

Subjects	6			7			8			9			10		
	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D
J.W.S.	17	24	+10	19	31	+12	21	16	-5	20	18	-2	21	27	+6
R.E.S.	24	23	-1	22	27	+5	16	18	+2	18	19	+1	19	35	+16
C.S.	25	27	+2	36	38	+2	19	18	-1	28	24	-4	33	27	-6
J.C.S.	23	21	-2	33	31	-2	19	24	+5	28	28	0	26	24	-2
E.S.	25	27	+2	37	33	-4	14	22	+8	32	29	-3	32	32	0
J.C.W.	20	20	0	23	28	+5	19	19	0	24	29	+5	26	24	-2
F.G.W.	23	27	+4	36	33	-3	21	23	+2	31	27	-4	30	24	-6
Total I Scores		964			1167			993			1208			1344	
Total F Scores		1067			1458			1074			1199			1331	
Difference		103			291			81			-9			-13	

Subjects	11			12			13			14			15		
	I	F	D	I	F	D	I	F	D	I	F	D	I	F	D
J.W.S.	17	23	+6	3	10	+7	18	16	-2	22	19	-3	72	71	-1
R.E.S.	24	22	-2	12	20	+8	0	22	+22	0	25	+25	0	79	+79
C.S.	28	28	0	25	22	-3	27	24	-3	35	26	-9	84	71	-13
J.C.S.	28	23	-5	23	20	-3	29	15	-14	27	22	-5	85	66	-19
E.S.	28	21	-7	19	21	+2	26	26	0	29	26	-3	100	97	-3
J.C.W.	21	24	+3	20	19	-1	21	18	-3	24	20	-4	72	81	+9
F.G.W.	28	26	-2	14	20	+6	24	24	0	29	32	+3	91	66	-25
Total I Scores		1156			912			951			1219			3426	
Total F Scores		1133			952			949			1141			3660	
Difference		-23			40			-2			-78			234	

Total Results for Group: Initial. . . . 18686
Final. 19675
Difference . . 989

APPENDIX G

COMPUTATIONAL TABLES

1. Comparison of Groups on A C E Psychological Examination.

2. Comparison of Groups on S R A Reading Record.

3. Results of Crow and Crow Examination in Child Psychology:

    a. Initial Test

    b. Final Test

    c. Comparisons Between Initial and Final Tests

    d. Correlations with Gains and the A C E

    e. Correlation and Comparison with Gains and Sex

A. C. E. PSYCHOLOGICAL EXAMINATION
Summer, 1954

Experimental Group			Control Group		
Raw Score	x_1	x_1^2	Raw Score	x_2	x_2^2
105	-1.3	1.69	89	-14.3	204.49
126	19.7	388.09	118	14.7	216.09
162	55.7	3102.49	113	9.7	94.09
94	-12.3	151.29	100	-8.3	10.89
105	-1.3	1.69	84	-19.3	372.49
97	-9.3	84.49	92	-11.3	127.69
132	25.7	660.49	133	29.7	882.09
121	14.7	216.09	80	-23.3	542.89
133	26.7	712.89	119	15.7	246.49
69	-37.3	1391.29	70	-33.3	1108.89
68	-38.3	1466.89	119	15.7	246.49
131	24.7	610.09	109	5.7	32.49
88	-18.3	334.89	98	-5.3	28.09
114	7.7	59.29	106	2.7	7.29
133	26.7	712.89	119	15.7	246.49
84	-22.3	497.29	N_2=15 | 1549	$\Sigma(x_2-M_2)^2$=4366.95	
65	-41.3	1705.69	M_2=103.3		
103	-3.3	10.89			
116	9.7	94.09			
137	30.7	942.49			
113	6.7	44.89			
80	-26.3	691.69			
123	16.7	278.89			
123	16.7	278.89			
77	-29.3	858.49			
95	-11.3	127.69			
109	2.7	7.29			
65	-41.3	1705.69			
124	17.7	313.29			
88	-18.3	334.89			
112	5.7	32.49			
119	12.7	161.29			
133	26.7	712.89			
82	-24.3	590.49			
108	1.7	2.89			
116	9.7	94.09			
104	-2.3	5.29			
89	-17.3	299.29			
101	-5.3	28.09			
N_1=39 | 4144	$\Sigma(x_1-M_1)^2$=19,715.51				
M_1=106.3					

$$S.D. = \sqrt{\frac{\Sigma(x_1 - M_1)^2 + \Sigma(x_2 - M_2)^2}{(N_1 - 1) + (N_2 - 1)}}$$

$$S.D. = \sqrt{\frac{19715.51 + 4366.95}{38 + 14}} = \sqrt{\frac{24082.46}{52}}$$

$$S.D. = \sqrt{463.12} = 21.52$$

$$S.E._D = S.D \sqrt{\frac{N_1 + N_2}{N_1 N_2}}$$

$$= 21.52 \sqrt{\frac{39 + 15}{39 \times 15}} = 21.52 \sqrt{\frac{54}{585}}$$

$$= 21.52 \sqrt{.0923} = 21.52 \times .304$$

$$S.E._D = 6.54$$

$$\underline{t} = \frac{M_D}{S.E._D} \qquad M_D = M_1 - M_2 = 3.0$$

$$\underline{t} = \frac{3}{6.54} = .46 \text{ not significant}$$

Entering Table D with 52 degrees of freedom one gets entries of 2.01 at the .05 and 2.68 at the .01 levels of confidence. The $\underline{t}$ does not reach the .05 level and the mean of 3 must be marked "non-significant."

S. R. A. READING RECORD
Summer, 1954

Experimental Group			Control Group		
Raw Score	x_1	x_1^2	Raw Score	x_2	x_2^2
96	-9.2	84.64	117	-17.5	306.25
113	7.8	60.84	126	26.5	702.25
110	4.8	23.04	122	22.5	506.25
141	35.8	1281.64	83	-16.5	272.25
121	15.8	249.64	80	-19.5	380.25
107	1.8	3.24	108	8.5	72.25
107	1.8	3.24	59	-40.5	1640.25
131	25.8	665.64	122	22.5	506.25
122	16.8	282.24	81	-18.5	342.25
109	3.8	14.44	124	24.5	600.25
53	-52.2	2724.84	80	-19.5	380.25
66	-39.2	1536.64	112	12.5	156.25
112	6.8	46.24	99	- .5	.25
88	-17.2	295.84	95	-4.5	20.25
121	15.8	249.64	84	-15.5	240.25
131	25.8	665.64	N_2=15 | 1492	$\Sigma(x_2-M_2)^2$=	6125.75
93	-12.2	148.84	99.5		
86	-19.2	368.64			
133	27.8	772.84			
129	23.8	566.44			
85	-20.2	408.04			
94	-11.2	125.44			
114	8.8	77.44			
121	15.8	249.64			
82	-23.2	538.24			
84	-21.2	449.44			
87	-18.2	331.24			
105	- .2	.04			
83	-22.2	492.84			
129	13.8	190.44			
76	-29.2	852.64			
127	21.8	475.24			
115	9.8	96.04			
114	8.8	77.44			
97	-8.2	67.24			
92	-13.2	174.24			
95	-10.2	104.04			
111	5.8	33.64			
133	27.8	772.84			
95	-10.2	104.04			
N_1=40 | 4208	$\Sigma(x_1-M_1)^2$=	15,664.40			
M_1 = 105.2					

$$S.D. = \sqrt{\frac{\Sigma(x_1 - M_1)^2 + \Sigma(x_2 - M_2)^2}{(N_1 - 1) + (N_2 - 1)}}$$

$$S.D. = \sqrt{\frac{15664.40 + 6125.75}{(40 - 1) - (15 - 1)}}$$

$$S.D. = \sqrt{\frac{21,790.15}{53}} = \sqrt{411.13} = 20.27$$

$$S.E._D = S.D.\sqrt{\frac{N_1 + N_2}{N_1 N_2}}$$

$$= 20.27\sqrt{\frac{40 + 15}{40 \times 15}} = 20.27\sqrt{\frac{55}{600}}$$

$$= 20.27\sqrt{.0917} = 20.27 \times .303$$

$$S.E._D = 6.14$$

$$\underline{t} = \frac{M_D}{S.E._D} \qquad M_D = 105.2 - 99.5 = 5.7$$

$$\underline{t} = \frac{5.7}{6.14} = .93$$

Entering Table D with 53 degrees of freedom one gets entries of 2.01 at the .05 level of confidence and 2.68 at the .01 level. This $\underline{t}$ does not reach the .05 level and the mean difference of 5.7 must be marked "non-significant."

A. C. E. PSYCHOLOGICAL EXAMINATION
Fall Groups, 1954-'55

Experimental Group			Control Group		
Raw Score	x_1	x_1^2	Raw Score	x_2	x_2^2
135	43.8	1918.44	86	-3.7	13.69
54	-37.2	1383.84	51	-38.7	1497.69
118	26.8	718.24	111	21.3	453.69
97	5.8	33.64	96	6.3	39.69
50	-41.2	1697.44	101	11.3	127.69
94	2.8	7.84	47	-40.7	1656.49
112	20.8	432.64	83	-6.7	44.89
87	-4.2	17.64	85	-4.7	22.09
103	11.8	139.24	85	-4.7	22.09
95	3.8	14.44	119	29.3	858.49
99	7.8	60.84	100	10.3	106.09
89	-2.2	4.84	72	-17.7	313.29
99	7.8	60.84	96	6.3	39.69
77	-14.2	201.64	140	50.3	2530.09
81	-10.2	104.04	67	-22.7	515.29
105	13.8	190.44	113	23.3	542.89
130	38.8	1505.44	81	-8.7	75.69
127	35.8	1281.64	90	.3	.09
86	-5.2	27.04	98	8.3	68.89
88	-3.2	10.24	85	-4.7	22.09
50	-41.2	1697.44	104	14.3	204.49
140	48.8	2381.44	72	-17.7	313.29
82	-9.2	84.64	136	46.3	2143.69
106	14.8	219.04	63	-26.7	712.89
56	-35.2	1239.04	55	-34.7	1204.09
110	18.8	353.44	76	-13.7	187.69
101	9.8	96.04	100	10.3	106.09
105	13.8	190.44	131	41.3	1705.69
75	-16.2	262.44	94	4.3	18.49
102	10.8	116.64	68	-21.7	470.89
119	27.8	772.84	54	-35.7	1274.49
81	-10.2	104.04	150	60.3	3636.09
56	-35.2	1239.04	92	2.3	5.29
97	5.8	33.64	109	19.3	372.49
103	11.8	139.24	108	18.3	334.89
59	-32.2	1036.84	43	-46.7	2180.89
77	-14.2	201.64	93	3.3	10.89
83	-8.2	67.24	92	2.3	5.29
72	-19.2	368.64	50	-39.7	1576.09
117	25.8	665.64	77	-12.7	161.29
54	-37.2	1383.84	79	-10.7	114.49
92	.8	.64	108	18.3	334.89
58	-33.2	1102.24	101	11.3	127.69
61	-30.2	912.04	86	-3.7	13.69
124	32.8	1075.84	57	-32.7	1069.29
66	-25.2	635.04	120	30.3	918.09
54	-37.2	1383.84	N_2=46	4126	$\Sigma(x_2-m_2)^2$=28,153.74
90	-1.2	1.44		M_2 = 89.7	
101	9.8	96.04			

A. C. E. PSYCHOLOGICAL EXAMINATION (Continued)
Fall Groups, 1954-'55

Experimental Group			Control Group		
Raw Score	x_1	x_1^2	Raw Score	x_2	x_2^2
90	-1.2	1.44			
117	25.8	665.64			
75	-16.2	262.44			
104	12.8	163.84			
132	40.8	1664.64			
89	-2.2	4.84			
107	15.8	249.64			
85	-6.2	38.44			
57	-34.2	1169.64			
81	-10.2	104.04			
118	26.8	718.24			
$1=60 \mid 5472$	$\Sigma(x_1-m_1)^2$	32,713.60			
$M_1=91.2$					

$$S.D. = \sqrt{\frac{\Sigma(x_1 - m_1)^2 + \Sigma(x_2 - m_2)^2}{(N_1 - 1) - (N_2 - 1)}}$$

$$S.D. = \sqrt{\frac{32,713.60 - 28,153.74}{(60 - 1) - (46 - 1)}} = \sqrt{\frac{60,867.34}{104}}$$

$$S.D. = \sqrt{585.26} = 24.19$$

$$S.E._D = S.D.\sqrt{\frac{N_1 + N_2}{N_1 N_2}}$$

$$= 24.19\sqrt{\frac{60 + 46}{2760}} = 24.19\sqrt{\frac{106}{2760}}$$

$$= 24.19\sqrt{.0384} = 24.19 \times .196$$

$$S.E._d = 4.74$$

$$t = \frac{M_D}{S.E._D} \qquad M_D = 91.2 - 89.7 = 1.5$$

$$t = \frac{1.5}{4.74} = .34$$

Entering Table D with 104 degrees of freedom one gets entries of 1.98 at the .05 level and 2.63 at the .01 level of confidence. A t of .34 does not reach the .05 level and the mean difference of 1.5 must be marked "non-significant."

S. R. A. READING RECORD
Fall, 1954-'55

Experimental Group			Control Group		
Raw Score	x_1	x_1^2	Raw Score	x^2	x_2^2
131	33.4	1115.56	97	-1.9	3.61
91	-6.6	43.56	67	-31.9	1017.61
123	25.4	645.16	110	11.1	123.21
104	6.4	40.96	80	-18.9	357.21
51	-46.6	2171.56	87	-11.9	141.61
111	13.4	179.56	91	-7.9	62.41
110	12.4	153.76	99	.1	.01
104	6.4	40.96	103	4.1	16.81
28	-69.6	4844.16	76	-22.9	524.41
63	-34.4	1197.16	133	34.1	1162.81
92	-5.6	31.36	116	17.1	292.41
82	-15.6	243.36	79	-19.9	396.01
80	-17.6	309.76	101	2.1	4.41
78	-19.6	384.16	136	37.1	1376.41
123	25.4	645.16	133	34.1	1162.81
105	7.4	54.76	97	-1.9	3.61
131	33.4	1115.56	92	-6.9	47.61
84	-13.6	184.96	112	13.1	171.61
94	-3.6	12.96	116	17.1	292.41
90	-7.6	57.76	109	10.1	102.01
132	34.4	1183.36	113	14.1	198.81
92	-5.6	31.36	83	-15.9	252.81
106	8.4	70.56	130	31.1	967.21
60	-37.6	1413.76	89	-9.9	98.01
114	16.4	268.96	56	-42.9	1840.41
113	15.4	237.16	110	11.1	123.21
97	- .6	.36	80	-18.9	357.21
117	19.4	376.36	107	8.1	65.61
131	33.4	1115.56	128	29.1	846.81
96	-1.6	2.56	91	-7.9	62.41
82	-15.6	243.36	67	-31.9	1017.61
125	27.4	750.76	124	25.1	630.01
121	23.4	547.56	104	5.1	26.01
81	-16.6	275.56	107	8.1	65.61
79	-18.6	345.96	114	15.1	228.01
137	39.4	1552.36	47	-51.9	2693.61
66	-31.6	998.56	109	10.1	102.01
105	7.4	54.76	92	-6.9	47.61
75	-22.6	510.76	74	-24.9	620.01
66	-31.6	998.56	91	-7.9	62.41
56	-41.6	1730.56	102	3.1	9.61
64	-33.6	1128.96	100	1.1	1.21
91	-6.6	43.56	101	2.1	4.41
95	-2. 6	6.76	68	-30.9	954.81
109	11.4	129.96	128	29.1	846.81
127	29.4	864.36	$N_2=45$	4449	$\Sigma(x_2-m_2)^2=19381.25$
103	5.4	29.16		$M_2=98.9$	

S. R. A. READING RECORD (Continued
Fall, 1954-'55

Experimental Group			Control Group		
Raw Score	x_1	x_1^2	Raw Score	x_2	x_2^2
112	14.4	207.36			
120	22.4	501.76			
90	-7.6	57.76			
92	-5.6	31.36			
116	18.4	338.56			
116	18.4	338.56			
108	10.4	108.16			
$N_1=54$ 5269	$\Sigma(X_1-M_1)^2=29,967.24$				
$M_1=97.6$					

$$S.D. = \sqrt{\frac{\Sigma(X_1-M_1)^2 + (X_2-M_2)^2}{(N_1-1) + (N_1-1)}}$$

$$= \sqrt{\frac{29,967.24 - 19381.25}{(54-1) + (45-1)}}$$

$$= \sqrt{\frac{49,348.49}{97}} = \sqrt{508.74}$$

$$S.D. = 22.55$$

$$S.E._D = S.D.\sqrt{\frac{N_1 + N_2}{N_1 N_2}}$$

$$= 22.55\sqrt{\frac{54+45}{54 \times 45}} = 22.55\sqrt{\frac{99}{2430}}$$

$$= 22.55\sqrt{.0407} = 22.55 \times .202$$

$$S.E._D = 4.55$$

$$t = \frac{M_D}{S.E._D} \qquad M_D = 98.9 - 97.6 = 1.$$

$$t = \frac{1.3}{4.55} = .29$$

Entering Table D with 97 degrees of freedom one gets entries of 1.98 at the .05 level and 2.63 at the .01 level of confidence. A t of .29 does not reach the .05 level and must be marked "non-significant"

COMPARISON OF SUMMER EXPERIMENTAL AND CONTROL GROUPS
INITIAL TEST
CROW AND CROW CHILD PSYCHOLOGY

Experimental Group

Raw Score	X_1	X_1^2
414	33	1089
373	- 8	64
341	- 40	1600
422	41	1681
378	- 3	9
345	- 36	1296
429	48	2304
335	- 46	2116
413	32	1024
407	26	676
396	15	225
383	2	4
344	- 37	1369
437	56	3136
307	- 74	5476
391	10	100
395	14	196
428	47	2209
409	28	784
389	8	64
330	- 51	2601
342	- 39	1521
371	- 10	100
392	11	121
438	57	3249
381	0	0
385	4	16
417	36	1296
378	- 3	9
397	16	256
401	20	400
360	- 21	441
348	- 33	1089
327	- 54	2916
321	- 60	3600
317	- 64	4096
346	- 35	1225
375	- 6	36
449	68	4624
447	66	4356
15258	$\Sigma(X_1-M_1)^2$ =	57364

381.45
Round to 381

Control Group

Score	X_2	X_2^2
407	24	576
406	23	529
407	24	576
430	47	2209
422	39	1521
400	17	289
397	14	196
387	4	16
376	- 7	49
375	- 8	64
386	3	9
366	- 17	289
349	- 34	1156
334	- 49	2401
308	-75	5625
5750		15505

N_2= 15

M_2 - 383.33
Round to 383

$$S.D = \sqrt{\frac{\Sigma(X_1-M_1)^2 + \Sigma(X_2-M_2)^2}{(N_1-1) + (N_2-1)}}$$

$$S.D.= \sqrt{\frac{57364 + 15505}{39 + 14}} = \sqrt{1374.88}$$

$$S.D.= 37.00$$

$$S.E_D= S.D. \sqrt{\frac{N_1 + N_2}{N_1N_2}} = 37 \sqrt{\frac{55}{600}}$$

$$S.E_D= 37 \sqrt{.092} = 37 \times .303 = 11.21$$

$$t = \frac{M_D}{SED} = \frac{383.33 - 381}{11.21} = \frac{2.33}{11.21} = .208$$

Entering table D with 53 degrees of freedom, one finds a t value of 2.01 is significant at the .05 level and 2.66 is significant at the .01 level. A t value of .208 is very much smaller. One must conclude that the difference between the control and experimental groups on the initial test is "non-significant."

COMPARISON BETWEEN FALL EXPERIMENTAL AND CONTROL GROUPS
INITIAL TEST
CROW AND CROW CHILD PSYCHOLOGY

Experimental Group			Control Group		
Raw Score	X_1	X_1^2	Raw Score	X_2	X_2^2
518	86	7396	432	18	324
503	71	5041	323	- 89	7921
484	52	2704	394	- 20	400
504	72	5184	338	- 76	5776
498	66	4356	291	-123	15129
517	85	7225	361	- 53	2809
454	22	484	408	- 6	36
477	45	2025	402	- 12	144
474	42	1764	475	61	3721
479	47	2209	367	- 47	2209
425	- 7	49	469	55	3025
374	- 58	3364	414	0	0
380	- 52	2704	427	13	169
385	- 47	2209	508	94	8836
410	- 22	484	499	85	7225
418	- 14	196	404	- 10	100
415	- 17	289	390	- 24	576
398	- 34	1156	440	26	676
376	- 56	3136	474	60	3600
397	- 35	1225	483	69	4761
340	- 92	8464	408	- 6	36
349	- 83	6889	378	- 36	1296
355	- 77	5929	477	63	3969
365	- 67	4489	391	- 23	529
385	- 47	2209	398	- 16	256
365	- 67	4489	428	14	196
371	- 61	3721	404	- 10	100
375	- 57	3249	368	- 46	2116
498	66	4356	485	71	5041
430	- 2	4	449	35	1225
484	52	2704	328	- 86	7396
507	75	5625	504	90	8100
493	61	3721	329	- 85	7225
425	- 7	49	464	50	2500
420	- 12	144	494	80	6400
434	2	4	371	- 43	1849
449	17	289	461	47	2209
457	25	625	448	34	1156
457	25	625	378	- 36	1296
465	33	1089	336	- 78	6084
460	28	784	251	-163	26569
472	40	1600	468	54	2916
480	48	2304	442	28	784
468	36	1296	460	46	2116

Experimental Group

Raw Score	X_1	X_1^2
460	28	784
459	27	729
463	31	961
456	24	576
399	- 33	1089
368	- 64	4096
402	- 30	900
424	- 8	64
453	21	441
381	- 51	2601
394	- 38	1444
394	- 38	1444
447	15	225
396	- 36	1296
413	- 19	361
399	- 33	1089
25898	$\Sigma(X_1-M_1)^2$ =	135958

$M_1 = 431.63$
Round to 432

Control Group

Raw Score	X_2	X_2^2
368	- 46	2116
457	43	1849
19046	$\Sigma(X_2-M_2)^2$ =	162766

$N_2 = 46$
414.04
Round to 414

$$S.D. = \sqrt{\frac{\Sigma(X_1-M_1)^2 + (X_2-M_2)^2}{(N_1-1) + (N_2-1)}} = \sqrt{\frac{135958 + 162766}{59 + 45}} = 53.59$$

$$S.E._D = S.D.\sqrt{\frac{N_1 + N_2}{N_1N_2}} = 53.59\sqrt{\frac{106}{2760}} = 53.59 \times .187 = 10.02$$

$$t = \frac{M_D}{S.E._D} = \frac{431.63 - 414.04}{10.02} = \frac{17.59}{10.02} = 1.75$$

Entering table D with 104 degrees of freedom, one finds a t value of 1.98 is significant at the .05 level and 2.63 is significant at the .01 level. A t of 1.75 falls short of that required at the .05 level so the difference between these two groups on the initial test is "non-significant."

COMPARISON BETWEEN POOLED SUMMER AND FALL
EXPERIMENTAL AND CONTROL GROUP
INITIAL TEST
CROW AND CROW CHILD PSYCHOLOGY

Experimental Group			Control Group		
Raw Score	X_1	X_1^2	Raw Score	X_2	X_2^2
518	106	11236	432	26	676
503	91	8281	325	19	361
484	72	5184	394	- 12	144
504	92	8464	338	- 68	4624
498	86	7396	291	-115	13225
517	105	11025	361	- 45	2025
454	42	1764	408	2	4
477	65	4225	402	- 4	16
474	62	3844	475	69	4761
479	67	4489	367	- 39	1521
425	13	169	469	63	3969
374	- 38	1444	414	8	64
380	- 32	1024	427	21	441
385	- 27	729	508	102	10404
410	- 2	4	499	93	8649
418	6	36	404	- 2	4
415	3	9	390	- 16	256
398	- 14	196	440	34	1156
376	- 36	1296	474	68	4624
297	- 15	225	483	77	5929
340	- 72	5184	408	2	4
349	- 63	3969	378	- 28	784
355	- 57	3249	477	71	5041
365	- 47	2209	391	- 15	225
385	- 27	729	398	- 8	64
365	- 47	2209	428	22	484
371	- 41	1681	404	- 2	4
375	- 37	1369	368	- 38	1444
498	86	7396	485	79	6241
430	18	324	449	43	1849
484	72	5184	328	- 78	6084
507	95	9025	504	98	9604
493	81	6561	329	- 77	5929
425	13	169	464	58	3364
420	8	64	494	88	7744
434	22	484	371	- 35	1225
449	37	1369	461	55	3025
457	45	2025	448	42	1764
457	45	2025	378	- 28	784
465	53	2809	336	- 70	4900
460	48	2304	251	- 155	24025
472	60	3600	468	62	3844
480	68	4624	442	36	1296

Experimental Group				Control Group		
Raw Score	X_1	X_1^2		Raw Score	X_2	X_2^2
468	56	3136		460	54	2916
460	48	2304		368	- 38	1444
459	47	2209		457	51	2601
463	51	2601		407	1	1
456	44	1936		406	0	0
399	- 13	169		407	1	1
368	- 44	1936		430	24	576
402	- 10	100		422	16	256
424	12	144		400	- 6	36
453	41	1681		397	- 9	81
381	- 31	961		387	- 19	361
394	- 18	324		376	- 30	900
394	- 18	324		375	- 31	961
447	35	1225		386	- 20	400
396	- 16	256		366	- 40	1600
413	1	1		349	- 57	3249
399	- 13	169		334	- 72	5184
414	2	4	N_2=	308	- 98	9604
373	- 39	1521	61	24796		182752
341	- 71	5041		406.49		
422	10	100		Round to 406		
378	- 34	1156				
345	- 67	4489		$S.D = \sqrt{\frac{\Sigma(X_1-M_1)^2 + \Sigma(X_2-M_2)^2}{(N_1-1) + (N_2-1)}}$		
429	17	289				
335	- 77	5929				
413	1	1		$= \sqrt{\frac{253776 + 182752}{99 + 60}} = \sqrt{2745.45}$		
407	- 5	25				
396	- 16	256				
383	- 29	841				
344	- 68	4624		$S.D = 52.4$		
437	25	625				
307	-105	11025				
391	- 21	441		$S.E_D = S.D.\sqrt{\frac{N_1 + N_2}{N_1 N_2}} = 524\sqrt{\frac{161}{6100}}$		
395	- 17	289				
428	16	256				
409	- 3	9		$S.E_D = 52.4 \times .161 = 8.44$		
389	- 23	529				
330	- 82	6724				
342	- 70	4900		$t = \frac{M_D}{S.E_D} = \frac{411.56 - 406.49}{8.44} = \frac{5.07}{8.44}$		
371	- 41	1681				
392	- 20	400				
438	26	676				
381	- 31	961				
385	- 27	729		$t = .600$		
417	5	25				
378	- 34	1156				
397	- 15	225		Entering Table D with 159 degrees of		
401	- 11	121		freedom one finds that a t value of		
360	- 52	2704		1.98 is significant at the .05 level		
348	- 64	4096		and 2.61 is significant at the .01 level.		

Experimental Group

Raw Score	X_1	X_1^2
327	- 85	7225
321	- 91	8281
317	- 95	9025
346	- 66	4356
375	- 37	1369
449	37	1369
447	35	1225
100 | 41156		253776

411.56
Round to 412

A t of .600 is far too small. There is no significant difference between these groups on the initial test.

COMPARISON OF SUMMER EXPERIMENTAL AND CONTROL GROUPS
FINAL TEST
CROW AND CROW PSYCHOLOGY EXAMINATION

Experimental Group

Raw Score	X_1	X_1^2
517	16	256
434	- 67	4489
512	11	121
616	115	13225
625	124	15376
596	95	9025
435	- 66	4356
502	1	1
505	4	16
396	- 105	11025
582	81	6561
691	190	36100
662	161	25921
333	- 168	28224
511	10	100
530	29	841
518	17	289
602	101	10201
501	0	0
653	152	23104
366	- 135	18225
387	- 114	12996
602	101	10201
416	- 85	7225
407	- 94	8836
424	- 77	5929
423	- 78	6084
432	- 69	4761
466	- 35	1225
451	- 50	2500
388	- 113	12769
450	- 51	2601
475	- 26	676
497	- 4	16
505	4	16
567	66	4356
501	0	0
584	83	6889
499	- 2	4
497	- 4	16
0 20058		294556

M_1=501.45

Round to 501

(See Note on next page)

Control Group

Raw Score	X_2	X_2^2
406	- 90	8100
543	47	2209
362	- 134	17956
532	36	1296
522	26	676
522	26	676
513	17	289
496	0	0
503	7	49
469	- 27	729
484	- 12	144
470	- 26	676
610	114	12996
545	49	2401
456	- 40	1600
N_2= 15 7433		49797

M_2 = 495.53
Round to 496

$$S.D. = \sqrt{\frac{\Sigma(X_1-M_1)^2 + \Sigma(X_2-M_2)^2}{(N_1-1) + (N_2-1)}}$$

$$S.D. = \sqrt{\frac{294556 + 49797}{39 + 14}} = 80.6$$

$$S.E_D = S.D.\sqrt{\frac{N_1 + N_2}{N_1 N_2}} = 80.6\sqrt{\frac{55}{600}}$$

$S.E_D$ = 80.6 X .303 24.42

$$\frac{t}{SE_D} = \frac{M_D}{24.42} = \frac{501.45 - 495.53}{24.42} = \frac{5.92}{24.42} = .242$$

Entering table D with 53 degrees of freedom one finds a t value of 2.01 is significant at the .05 level and a t of 2.66 is significant at the .01 level. A t of .242 is not large enough to indicate a significant difference in these groups on the final list.

Note: For some reason this Control Group improved about as much as the Experimental Group. Refer to sheet on comparison of Summer Control Group on initial and final test and find a significant difference with a *t* value of 6.03.

t for the experimental group (summer) was only 7.62.

COMPARISON BETWEEN FALL EXPERIMENTAL AND CONTROL GROUPS
FINAL TEST
CROW AND CROW CHILD PSYCHOLOGY

Experimental Group			Control Group		
Raw Score	X_1	X_1^2	Raw Score	X_2	X_2^2
494	18	324	419	- 10	100
487	11	121	443	14	196
486	10	100	387	- 42	1764
485	9	81	374	- 55	3025
486	10	100	417	- 12	144
483	7	49	395	- 34	1156
483	7	49	539	110	12100
477	1	1	469	40	1600
474	- 2	4	451	22	484
456	- 20	400	500	71	5041
448	- 28	784	498	69	4761
448	- 28	784	415	- 14	196
446	- 30	900	465	36	1296
447	- 29	841	460	31	961
443	- 33	1089	511	82	6724
442	- 34	1156	667	238	56664
433	- 43	1849	503	74	5476
454	- 22	484	379	- 50	2500
439	- 37	1369	518	89	7921
493	17	289	388	- 41	1681
490	14	196	323	-106	11236
490	14	196	382	- 47	2209
383	- 93	8649	499	70	4900
387	- 89	7921	445	16	256
707	231	53361	350	- 79	6241
666	190	36100	559	130	16900
648	172	29584	511	82	6724
553	77	5929	663	234	54756
495	19	361	354	- 75	5625
541	65	4225	531	102	10404
536	60	3600	469	40	1600
531	55	3025	392	- 37	1369
523	47	2209	354	- 75	5625
527	51	2601	450	21	441
529	53	2809	401	- 28	784
517	41	1681	426	- 3	9
523	47	2209	456	27	729
513	37	1369	453	24	576
510	34	1156	403	- 26	676
504	28	784	395	- 34	1156
507	31	961	288	-141	19881
502	26	676	187	-242	58564

Experimental Group

Raw Score	X_1	X_1^2
498	22	484
497	21	441
496	20	400
388	- 88	7744
388	- 88	7744
391	- 85	7225
401	- 75	5625
404	- 72	5184
411	- 65	4225
417	- 59	3481
416	- 60	3600
419	- 57	3249
421	- 55	3025
420	- 56	3136
422	- 54	2916
424	- 52	2704
425	- 51	2601
431	- 45	2025
28555		246193

= 475.75
nd to 476

Control Group

Raw Score	X_2	X_2^2
397	- 32	1024
394	- 35	1225
421	- 8	64
39	-390	152100
19740		478864

46 | 19740
M_2 = 429.12
Round to 429

$$S.D. = \sqrt{\frac{\sum(X_1 M_1)^2 + (X_2-M_2)^2}{(N_1-1) + (N_2-1)}} = \sqrt{\frac{246193 + 478864}{59 + 45}}$$

$$S.D. = \sqrt{6971.7} = 83.5$$

$$S.E._D = S.D.\sqrt{\frac{N_1 + N_2}{N_1 N_2}} = 83.5\sqrt{\frac{106}{2760}} = 83.5 \times .187 = 15.61$$

$$t = \frac{M_D}{S.E._D} = \frac{475.75 - 429.12}{15.61} = \frac{46.63}{15.61} = 2.99$$

Entering table D with 104 degrees of freedom one finds a t value of 1.98 is significant at the .05 level and a 2.63 is significant at the .01 level, so one must mark the difference between these groups significant at the .01 level on the final test.

COMPARISON BETWEEN POOLED SUMMER AND FALL
EXPERIMENTAL AND CONTROL GROUPS
FINAL TEST
CROW AND CROW CHILD PSYCHOLOGY

Experimental Group			Control Group		
Raw Score	X_1	X_1^2	Raw Score	X_2	X_2^2
494	8	64	419	- 26	676
489	1	1	443	- 2	4
486	0	0	387	- 58	3364
485	- 1	1	374	- 71	5041
486	0	0	417	- 28	784
483	- 3	9	395	- 50	2500
483	- 3	9	539	94	8836
477	- 9	81	469	24	576
474	- 12	144	451	6	36
456	- 30	900	500	55	3025
448	- 38	1444	498	53	2809
448	- 38	1444	415	- 30	900
446	- 40	1600	465	20	400
447	- 39	1521	460	15	225
443	- 43	1849	511	66	4356
442	- 44	1936	667	222	49284
433	- 53	2809	503	58	3364
454	- 32	1024	379	- 66	4356
439	- 47	2209	518	73	5329
493	7	49	388	- 57	3249
490	4	16	323	-122	14884
490	4	16	382	- 73	5329
383	-103	10609	499	54	2916
387	- 99	9801	445	0	0
707	221	48841	350	- 95	9025
666	180	32400	559	114	12996
648	162	26244	511	66	4356
553	67	4489	663	218	47524
495	9	81	354	- 91	8281
541	55	3025	531	86	7396
536	50	2500	469	24	576
531	45	2025	392	- 53	2809
523	37	1369	354	- 91	8281
527	41	1681	450	5	25
529	43	1849	401	- 44	1936
517	31	961	426	- 19	361
523	37	1369	456	11	121
513	27	729	453	8	64
510	24	576	403	- 42	1764
504	18	324	395	- 50	2500
507	21	441	288	-157	24649
502	16	256	187	-258	66564
498	12	144	397	- 48	2304

Experimental Group

Raw Score	X_1	X_1^2
497	11	121
496	10	100
388	- 98	9604
388	- 98	9604
391	- 95	9025
401	- 85	7225
404	- 82	6724
411	- 75	5625
417	- 69	4761
416	- 70	4900
419	- 67	4489
421	- 65	4225
420	- 66	4356
422	- 64	4096
424	- 62	3844
425	- 61	3721
431	- 55	3025
517	31	961
434	- 52	2704
512	26	676
616	130	16900
625	139	19321
596	110	12100
435	- 51	2601
502	16	256
505	19	361
396	- 90	8100
582	96	9216
691	205	42025
662	176	30976
333	-153	23409
511	25	625
530	44	1936
518	32	1024
602	116	13456
501	15	225
653	167	27889
366	-120	14400
387	- 99	9801
602	116	13456
416	- 70	4900
407	- 79	6241
424	- 62	3844
423	- 63	3969
432	- 54	2916
466	- 20	400
451	- 35	1225
388	- 98	9604
450	- 36	1296
475	- 11	121
497	11	121
505	19	361

Control Group

Raw Score	X_2	X_2^2
394	- 51	2601
421	- 24	576
39	-406	164836
406	- 39	1521
543	98	9604
362	- 83	6889
532	87	7569
522	77	5929
522	77	5929
513	68	4624
496	51	2601
503	58	3364
469	24	576
484	39	1521
470	25	625
610	165	27225
545	100	10000
456	11	121
N_2=61	27173	579886

445.46
Round to 445

Experimental Group			Control Group		
Raw Score	X_1	X_1^2	Raw Score	X_2	X_2^2
567	81	361			
567	81	6561			
501	15	225			
584	98	9604			
499	13	169			
497	11	121			
48613		556381			

$M_1 = 486.13$
Round to 486

$$S.D = \sqrt{\frac{\Sigma(X_1-M_1)^2 + \Sigma(X_2-M_2)^2}{(N_1-1) + (N_2-1)}} = \sqrt{\frac{556381 + 579886}{99 + 60}} = \sqrt{7146.33}$$

$$S.D = 84.54$$

$$S.E_D = S.D.\sqrt{\frac{N_1 + N_2}{N_1N_2}} = 84.54\sqrt{\frac{161}{6100}} = 84.54 \times .161 = 13.51$$

$$t = \frac{M_D}{S.E_D} = \frac{486.13 - 445.46}{13.51} = \frac{40.67}{13.51} = 3.01$$

Entering table D with 159 degrees of freedom, one finds that a $\underline{t}$ value of 1.98 is significant at the .05 level and 2.61 is significant at the .01 level. A $\underline{t}$ of 3.01 exceeds 2.61 so the difference between these two groups on the final test is significant at the .01 level.

COMPARISON BETWEEN INITIAL AND FINAL TEST
SUMMER EXPERIMENTAL GROUP
CROW AND CROW CHILD PSYCHOLOGY

Initial Test Raw Score	Final Test Raw Score	Difference	X	X^2
414	517	103	- 17	289
373	434	61	- 59	3481
341	512	171	51	2601
422	616	194	74	5476
378	625	247	127	16129
345	596	251	131	17161
429	435	6	-114	12996
335	502	167	47	2209
413	505	92	- 28	784
407	396	- 11	-131	17161
396	582	186	66	4356
383	691	308	188	35344
344	662	318	198	39204
437	333	- 104	-224	50176
307	511	204	84	7056
391	530	139	19	361
395	518	123	3	9
428	602	174	54	2916
409	501	92	- 28	784
389	653	264	144	20736
330	366	36	- 84	7056
342	387	45	- 75	5625
371	602	231	111	12321
392	416	24	- 96	9216
438	407	31	-151	22801
381	424	43	- 77	5929
385	423	38	- 82	6724
417	432	15	-105	11025
378	466	88	- 32	1024
397	451	54	- 66	4356
401	388	- 13	-133	17689
360	450	90	- 30	900
348	475	127	7	49
327	497	170	50	2500
321	505	184	64	4096
317	567	250	130	16900
346	501	155	35	1225
375	584	209	89	7921
449	499	50	- 70	4900
447	427	50	- 70	4900
=40 15258	20058	40 | 4800		386386
N_1=381.45	M_2=501.45	M_D=120		

(Continued on next page)

$$S.D_D = \sqrt{\frac{\Sigma x^2}{N-1}} = \sqrt{\frac{386386}{39}}$$

$$S.D_D = \sqrt{9907.33} = 99.53$$

$$S.E._{M_D} = \frac{S.D.}{\sqrt{N}} = \frac{99.53}{\sqrt{40}} = \frac{99.53}{6.32} = 15.74$$

$$t = \frac{M_D}{S.E_{M_D}} = \frac{120}{15.74}$$

$$t = 7.62$$

Entering table D with 39 degrees of freedom one finds that a t value of 2.02 is significant at the .05 level and a t value of 2.71 is significant at the .01 level. A t of 7.62 is much larger than the a.71 required at the .01 level. Therefore the gain from initial to final test is very significant.

COMPARISON BETWEEN INITIAL AND FINAL TEST
FALL EXPERIMENTAL GROUP
CROW AND CROW PSYCHOLOGY EXAMINATION

Initial Test Raw Score	Final Test Raw Score	Difference	X	X^2
518	494	- 24	- 68	4624
503	487	- 16	- 60	3600
484	486	2	- 42	1764
504	485	- 19	- 63	3969
498	486	- 12	- 56	3136
517	483	- 34	- 78	6084
454	483	29	- 15	225
477	477	0	- 44	1936
474	474	0	- 44	1936
479	456	- 23	- 67	4489
425	448	23	- 21	441
374	448	74	30	900
380	446	66	22	484
385	447	62	18	324
410	443	33	- 11	121
418	442	24	- 20	400
415	433	18	- 26	676
398	454	56	12	144
376	439	63	19	361
397	493	96	52	2704
340	490	150	106	11236
349	490	141	97	9409
355	383	28	- 16	256
365	387	22	- 22	484
385	707	322	278	77284
365	666	301	257	66049
371	648	277	233	54289
375	553	178	134	17956
498	495	- 3	- 47	2209
430	541	111	67	4489
484	536	52	8	64
507	531	24	- 20	400
493	523	30	- 14	196
425	527	102	58	3364
420	529	109	65	4225
434	517	83	39	1521
449	523	74	30	900
457	513	56	12	144
457	510	53	9	81
465	504	39	- 5	25
460	507	47	3	9
472	502	30	- 14	196
480	498	18	- 26	676
468	497	29	- 15	225
460	496	36	- 8	64
459	388	- 71	-115	13225

Initial Test Raw Score	Final Test Raw Score	Difference	X	X^2
463	388	- 75	-119	14161
456	391	- 65	-109	11881
399	401	2	- 42	1764
368	404	36	- 8	64
402	411	9	- 35	1225
424	417	- 7	- 51	2601
453	416	- 37	- 81	6561
381	419	38	- 6	36
394	421	27	- 17	289
394	420	26	- 18	324
447	422	- 25	- 69	4761
396	424	28	- 16	256
413	425	12	- 32	1024
399	431	32	- 12	144
60 25898	60 28555	60 2657		352385
$M_1 = 431.63$	$M_2 = 475.91$	$M_D = 44.28$ Round to 44		

$$S.D._D = \sqrt{\frac{\Sigma X^2}{N-1}} = \sqrt{\frac{352385}{59}} = 77.28$$

$$S.E._{M_D} = \frac{S.D.}{\sqrt{N}} = \frac{77.28}{\sqrt{60}} = \frac{77.28}{7.75} = 9.97$$

$$t = \frac{M_D}{S.E._{M_D}} = \frac{44.28}{9.97} = 4.44$$

Entering table D with 59 degrees of freedom one finds that a t value of 2.00 is significant at the .05 level and a t value of 2.66 is significant at the .01 level of confidence. A t of 4.44 is much larger than the 2.66 required for significance at the .01 level. Therefore, the gain from initial to final test is very significant for the fall experimental group.

COMPARISON BETWEEN INITIAL AND FINAL TEST
POOLED SUMMER AND FALL EXPERIMENTAL GROUPS
CROW AND CROW CHILD PSYCHOLOGY

Initial Test Raw Score	Final Test Raw Score	Difference	X	X^2
518	494	- 24	- 99	9801
503	487	- 16	- 91	8281
484	486	2	- 73	5329
504	485	- 19	- 94	8836
498	486	- 12	- 87	7569
517	483	- 34	-109	11881
454	483	29	- 46	2116
477	477	0	- 75	5625
474	474	0	- 75	5625
479	456	- 23	- 98	9604
425	448	23	- 52	2704
374	448	74	- 1	1
380	446	66	- 9	81
385	447	62	- 13	169
410	443	33	- 42	1764
418	442	24	- 51	2601
415	433	18	- 57	3249
398	454	56	- 19	361
376	439	63	- 12	144
397	493	96	21	441
340	490	150	73	5625
349	490	141	66	4356
355	383	28	- 47	2209
365	387	22	- 53	2809
385	707	322	247	61009
365	666	301	226	51076
371	648	277	202	40804
375	553	178	103	10609
498	495	- 3	- 78	6084
430	541	111	36	1296
484	536	52	- 23	529
507	531	24	- 51	2601
493	523	30	- 45	2025
425	527	102	27	729
420	529	109	34	1156
434	517	83	8	64
449	523	74	- 1	1
457	513	56	- 19	361
457	510	53	- 22	484
465	504	39	- 36	1296
460	507	47	- 28	784
472	502	30	- 45	2025
480	498	18	- 57	3249
468	497	29	- 46	2116
460	496	36	- 39	1521
459	388	- 71	-146	21316

Initial Test Raw Score	Final Test Raw Score	Difference	X	X^2
463	388	- 75	-150	22500
456	391	- 65	-140	19600
399	401	2	- 73	5329
368	404	36	- 39	1521
402	411	9	- 66	4356
424	417	- 7	- 82	6724
453	416	- 37	-112	12544
381	419	38	- 37	1369
394	421	27	- 48	2304
394	420	26	- 49	2401
447	422	- 25	-100	10000
396	424	28	- 47	2209
413	425	12	- 63	3969
399	431	32	- 43	1849
414	517	103	28	784
373	434	61	- 14	196
341	512	171	96	9216
422	616	194	119	14161
378	625	247	172	29584
345	596	251	176	30976
429	435	6	- 69	4761
335	502	167	92	8464
413	505	92	17	289
407	396	- 11	- 86	7396
396	582	186	111	12321
383	691	308	233	54289
344	662	318	243	59049
437	333	-104	-179	32041
307	511	204	129	16641
391	530	139	64	4096
395	518	123	48	2304
428	602	174	99	9801
409	501	92	17	289
389	653	264	189	35721
330	366	36	- 39	1521
342	387	45	- 30	900
371	602	231	156	24336
392	416	24	- 51	2601
438	407	- 31	-106	11236
381	424	43	- 32	1024
385	423	38	- 37	1369
417	432	15	- 60	3600
378	466	88	13	169
397	451	54	- 21	441
401	388	- 13	- 88	7744
360	450	90	15	225
348	475	127	52	2704
327	497	170	95	9025
321	505	184	109	11881
317	567	250	175	30625

Initial Test Raw Score	Final Test Raw Score	Difference	X	X^2
346	501	155	80	6400
375	584	209	134	17956
449	499	50	- 25	625
447	497	50	- 25	625
41156	48613	7457		876377
$M_1 = 411.56$	$M_2 = 486.13$	$M_D = 74.57$ Round to 75		

N = 100

$$S.D._D = \sqrt{\frac{\Sigma X^2}{N-1}} = \sqrt{\frac{876377}{99}} = 94.08$$

$$S.E_{M_D} = \frac{S.D.}{\sqrt{N}} = \frac{94.08}{\sqrt{100}} = \frac{94.08}{10} = 9.41$$

$$t = \frac{M_D}{S.E_{M_D}} = \frac{74.57}{9.41} = 7.92$$

For 100 degrees of freedom a t value of 1.98 is significant at the .05 level and a t value of 2.63 is significant at the .01 level. A t of 7.92 is much larger than the 2.63 required for significance at the .01 level. Therefore, the gain from initial to final test is very significant.

COMPARISON BETWEEN INITIAL AND FINAL TEST
SUMMER CONTROL GROUP
CROW AND CROW CHILD PSYCHOLOGY

Initial Test Raw Score	Final Test Raw Score	Difference	X	X^2
407	406	- 1	- 113	12769
406	543	137	25	625
407	362	- 45	- 157	24649
430	532	102	- 10	100
422	522	100	- 12	144
400	522	122	10	100
397	513	116	4	16
387	496	109	- 3	9
376	503	127	15	225
375	469	94	- 18	324
386	484	98	- 14	196
366	470	104	- 8	64
349	610	261	149	22201
334	545	211	99	9801
308	456	148	36	1296
=15 5720	7433	15 1683		72519
383.33	495.53	M_D 112.2		

Round off to 112.

Mean difference = 112

$$SD_D = \sqrt{\frac{\Sigma X^2}{N-1}} = \sqrt{\frac{72519}{14}} = 71.9$$

$$SE_{M_D} = \frac{SD}{\sqrt{N}} = \frac{71.9}{\sqrt{15}} = \frac{71.9}{3.87} = 18.58$$

$$t - \frac{M_D}{SE_{M_D}} = \frac{112.2}{18.6} = 6.03$$

Entering table D with 14 degrees of freedom one finds that a t value of 2.96 is significant at the .01 level. A t of 6.03 is much larger than the .01 level of 2.96. Therefore, the gain from initial test to final test is significant for the summer control group.

This very significant gain is what caused the difference between Experimental and Control Summer Groups on the final test to show up "non-significant."

COMPARISON BETWEEN INITIAL AND FINAL TEST
FALL CONTROL GROUP
CROW AND CROW CHILD PSYCHOLOGY

Initial Test Raw Score	Final Test Raw Score	Difference	X	X^2
432	419	- 13	- 28	784
324	443	118	103	10609
394	387	- 7	- 22	484
338	374	36	21	441
291	417	126	111	12321
361	395	34	19	361
408	539	131	116	13456
402	469	67	52	2704
475	451	- 24	- 39	1521
367	500	133	118	13924
469	498	29	14	196
414	415	1	- 14	196
427	465	38	23	529
508	460	- 48	- 63	3969
499	511	12	- 3	9
404	667	263	248	61504
390	503	113	98	9604
440	379	- 61	- 76	5476
474	518	44	29	841
483	388	- 95	-110	12100
408	323	- 85	-100	10000
378	382	4	- 11	121
477	499	22	7	49
391	445	54	39	1521
398	350	- 48	- 63	3969
428	559	131	116	13456
404	511	107	92	8464
368	663	295	280	78400
485	354	-131	-146	21316
449	531	82	67	4489
328	469	141	126	15876
504	392	-112	-127	16129
329	354	25	10	100
464	450	- 14	- 29	841
494	401	- 93	-108	11664
371	426	55	40	1600
461	456	- 5	- 20	400
448	453	5	- 10	100
378	403	25	10	100
336	395	59	44	1936
251	288	37	22	484
468	187	-281	-296	87616
442	397	- 45	- 60	3600
460	394	- 66	- 81	6561

Initial Test Raw Score	Final Test Raw Score	Difference	X	X^2
368	421	53	38	1444
457	39	-418	-433	187489
19046 N = 46	19740	46 694		629054
M_1 = 414.04	M_2 = 429.12	M_D = 15.08 Round to 15		

$$S.D._D = \sqrt{\frac{\Sigma x^2}{N-1}} = \sqrt{\frac{629054}{45}} = 118.23$$

$$S.E_{M_D} = \frac{S.D.}{\sqrt{N}} = \frac{118.23}{\sqrt{46}} = \frac{118.23}{6.78} = 17.44$$

$$t = \frac{M_D}{S.E_{M_D}} = \frac{15.08}{17.44} = .86$$

Entering table D with 45 degrees of freedom one finds that a t value of 2.02 is significant at the .05 level and a t value of 2.69 is significant at the .01 level. Since this t does not even reach the 2.02, one must conclude that there is no significant gain from initial test to final test for the fall control group.

COMPARISON BETWEEN INITIAL AND FINAL TEST
POOLED SUMMER AND FALL CONTROL GROUPS
CROW AND CROW EXAMINATION IN CHILD PSYCHOLOGY

Initial Test Raw Score	Final Test Raw Score	Difference	X	X^2
432	419	- 13	- 52	2704
325	443	118	79	6241
394	387	- 7	- 46	2116
338	374	36	- 3	9
291	417	126	87	7569
361	395	34	- 5	25
408	539	131	92	8464
402	469	67	28	784
475	451	- 24	- 63	3969
367	500	133	94	8836
469	498	29	- 10	100
414	415	1	- 38	1444
427	465	38	- 1	1
508	460	- 48	- 87	7569
499	511	12	- 27	729
404	667	263	224	50176
390	503	113	74	5476
440	379	- 61	-100	10000
474	518	44	5	25
483	388	- 95	-134	17956
408	323	- 85	-124	15376
378	382	4	- 35	1225
477	499	22	- 17	289
391	445	54	15	225
398	350	- 48	- 87	7569
428	559	131	92	8464
404	511	107	68	4624
368	663	295	256	65536
485	354	-131	-170	28900
449	531	82	43	1849
328	469	141	102	10404
504	392	-112	-151	22801
329	354	25	- 14	196
464	450	- 14	- 53	2809
494	401	93	-132	17424
371	426	55	16	256
461	456	- 5	- 44	1936
448	453	5	- 34	1156
378	403	25	- 14	196
336	395	59	20	400
251	288	37	- 2	4
468	187	-281	-320	102400
442	397	- 45	- 84	7056
460	394	- 66	-105	11025
368	421	53	14	196

Initial Test Raw Score	Final Test Raw Score	Difference	X	X^2
457	39	-418	-457	208849
407	406	- 1	- 40	1600
406	543	137	98	9604
407	362	- 45	- 84	7056
430	532	102	63	3969
422	522	100	61	3721
400	522	122	83	6889
397	513	116	77	5929
387	496	109	70	4900
376	503	127	88	7744
375	469	94	55	3025
386	484	98	59	3481
366	470	104	65	4225
349	610	261	222	49284
334	545	211	172	29584
308	456	148	109	11881
61 |24796	27173	61 |2377		808250
M_1 = 406.49	M_2 = 445.46	M_D = 38.97 Round to 39		

$$S.D._D = \sqrt{\frac{\Sigma X^2}{N-1}} = \sqrt{\frac{808250}{60}} = 116.06$$

$$S.E._{M_D} = \frac{116.06}{\sqrt{61}} = \frac{116.06}{7.81} = 14.86$$

$$t = \frac{M_D}{S.E._{M_D}} = \frac{38.97}{14.86} = 2.62$$

Entering table D with 60 degrees of freedom one finds that a t value of 2.66 is significant at the .01 level and a t value of 2.00 is significant at the .05 level. A t of 2.62 falls short of the 2.66 required for significance at the .01 level but is significant at the .05 level of confidence.

COMPUTATIONAL TABLE FOR CORRELATIONS

BETWEEN GAINS AND A C E AND SEX

Experimental Groups

This table shows the columnar arrangement of the raw data necessary to make the correlations between mental ability as displayed on the A C E and difference in gains between the iniiial and final testing on the Crow test. The sex of each subject is indicated. The first column lists the subjects for each group which in this table are pooled. The sex of the subject follows in the next column. The differences between the scores on the initial testing and final testing fill the next column and the last row of figures shows the gains or losses made on the Crow and Crow Examination with the addition of 400 which eliminates negative difference. This is a procedure recommended for correlation results.

Correlation of Achievement Gains on the Crow and Crow With the Results of the A C E and Correlation With Achievement and Sex for the Experimental Group

A C E and Sex (Raw Score)		Difference in points in Initial and Final Scores	
D.A. (boy)	105	40	440*
F.B. (girl)	126	224	624
A.B. (girl)	162	242	642
R.F.B. (boy)	94	54	454
E.B. (boy)	105	27	427
P.C. (girl)	97	270	670
C.D. (boy)	132	207	607
S.F. (girl)	121	108	508
R.G. (boy)	133	105	505

*Note: In order to eliminate the negative differences, 400 was added to all scores because the biggest negative difference was -393. Adding a constant term to all scores does not change the sigma of the distribution nor does it affect the correlation with another set of scores. It does add 400 to the mean of the differences but this has no effect on the comparison.

Experimental Groups, Continued

A C E and Sex (Raw Score)		Difference in points in Initial and Final Scores	
W.L.G. (boy)	69	6	406
J.H. (boy)	68	309	709
D.L.H. (boy)	131	73	473
J.H. (boy)	88	91	491
S.H. (girl)	114	154	554
R.F.H. (boy)	133	172	572
L.H. (boy)	84	154	554
J.A.H. (boy)	65	124	524
A.F.H. (boy)	103	76	476
W.J. (girl)	116	122	522
K.K. (boy)	137	196	596
E.R.L. (boy)	113	61	461
J.J.McM. (boy)	80	25	425
E.M. (boy)	123	83	483
B.M. (boy)	123	154	554
N.M. (boy)	77	78	478
P.O.N. (boy)	95	79	479
O.W.P. (boy)	109	145	545
M.L.P. (girl)	65	193	593
M.P. (girl)	124	67	467
J.J.R. (girl)	88	217	617
J.J.R. (girl)	112	98	498
D.R. (boy)	119	88	488
H.S. (boy)	133	45	445
J.S. (girl)	82	98	498
D.S. (boy)	108	53	347
B.T. (boy)	116	85	485
C.J.V. (girl)	104	90	490
B.W. (girl)	89	155	555
A.W. (boy)	101	86	486
N.H.A. (boy)	135	13	413
J.A. (girl)	54	29	429
B.B. (girl)	118	3	403
K.B. (boy)	97	77	477
D.B. (boy)	50	15	415
N.J.C. (girl)	94	58	458
R.C. (boy)	112	28	428
J.A.C. (girl)	87	126	526
F.D.C. (boy)	103	11	411
H.D.C. (boy)	95	7	407
M.B.C. (girl)	99	24	424
M.J.C. (girl)	89	21	421
E.N.C. (girl)	99	11	411
J.F.D. (boy)	77	91	491
M.K.D. (boy)	81	120	520
R.R.D. (girl)	105	85	485
E.W.D. (boy)	130	53	453
W.F. (girl)	127	162	426

Experimental Groups, Concluded

A C E and Sex (Raw Score)		Difference in points in Initial and Final Scores	
R.G. (boy)	86	17	417
M.J.G. (girl)	88	32	432
K.E.G. (boy)	50	68	468
F.G.H. (girl)	140	41	441
R.D.H. (boy)	82	42	442
A.W.H. (boy)	106	42	442
C.H. (boy)	56	13	413
M.J.J. (girl)	110	242	642
L.E.K. (boy)	101	30	430
M.M.K. (boy)	105	17	417
J.A.L. (boy)	75	24	424
E.C.L. (girl)	102	24	424
D.L. (boy)	119	22	422
Z.McC.L. (girl)	81	33	433
M.L. (girl)	56	33	433
O.D.McA. (boy)	97	3	403
D.E.McD. (girl)	103	59	459
N.M. (boy)	59	16	416
R.M. (boy)	77	50	450
J.R.M. (boy)	83	10	410
M.J.O. (girl)	117	57	457
L.O.P. (boy)	54	23	423
D.J.P. (girl)	92	56	456
J.A.P. (girl)	58	34	434
G.R.R. (boy)	61	48	448
K.K.S. (boy)	124	6	406
R.C.S. (boy)	66	48	448
J.D.S. (boy)	54	10	410
B.S.Jr. (boy)	90	30	430
W.S. (boy)	101	-26	374
G.J.S. (girl)	90	34	434
J.C.S. (boy)	117	19	419
M.M.T. (girl)	75	51	451
J.H.T. (boy)	104	185	585
A.T. (boy)	132	9	409
H.D.T. (boy)	89	56	456
R.W.T. (boy)	107	-6	394
P.A.T. (girl)	85	27	427
J.L.W. (boy)	57	40	440
N.L.W. (girl)	81	27	427
P.H.W. (boy)	118	145	545

Control Groups

This table shows the columnar arrangement of the raw data necessary to make the correlations between mental ability as displayed on the A C E and difference in gains between the initial and final testing on the Crow test. The sex of each subject is indicated. The first column lists the subjects for each group which in this table are pooled. The sex of the subject follows in the next column. The differences between the scores on the initial testing and final testing fill the next column and the last row of figures shows the gains or losses made on the Crow and Crow Examination with the addition of 400 which eliminates negative difference. This is a procedure recommended for correlation results.

Correlation of Achievement Gains on the Crow and Crow Examination and Correlation with Achievement and Sex for the Pooled Control Groups

A C E and Sex (Raw Score)		Difference in points in Initial and Final Scores	
D.B. (boy)	97	-393	7
D.L.B. (girl)	67	70	470
J.C.B. (boy)	110	25	425
C.W.C. (boy)	80	105	505
P.C. (boy)	87	-104	296
H.V.D. (boy)	91	20	420
T.D. (boy)	99	13	413
J.A.E. (boy)	103	9	409
A.D.E. (boy)	76	-7	393
P.G.E. (girl)	133	64	464
M.L.G. (girl)	116	0	400
R.J.G. (boy)	79	-126	274
L.W.H. (boy)	101	29	371
A.L.H. (boy)	136	-8	392
P.H. (girl)	133	-1	399
B.J.H. (girl)	97	11	389
E.H. (boy)	92	75	475
A.H. (girl)	112	20	420
E.H. (boy)	116	37	437
L.M.J. (girl)	109	20	420
R.K. (boy)	113	259	659
M.L. (girl)	83	1	401
J.B.L. (girl)	130	40	440
G.L. (girl)	89	-3	397

Control Groups, Concluded

A C E and Sex (Raw Score)		Difference in points in Initial and Final Scores	
C.E.L. (boy)	56	-75	325
B.N.McC. (boy)	110	-31	369
D.R.McK. (boy)	80	97	497
D.H.M. (boy)	107	-22	378
E.M. (girl)	128	6	406
M.A.M. (girl)	91	4	404
N.M. (girl)	67	22	422
H.N. (boy)	124	55	455
J.J.P. (boy)	104	182	482
J.P. (girl)	107	-18	382
P.L.P. (girl)	114	169	569
J.P. (boy)	47	-17	383
W.P. (girl)	109	70	470
N.J.P. (girl)	92	21	421
M.R. (girl)	74	14	414
J.W.S. (boy)	91	18	418
R.E.S. (boy)	79	143	543
C.S. (boy)	102	-47	353
J.C.S. (boy)	100	-39	361
E.S. (girl)	101	-10	390
J.C.W. (girl)	68	33	433
F.G.W. (girl)	128	-31	369
R.B. (girl)	89	203	603
B.N.B. (girl)	118	106	506
C.B. (girl)	113	121	521
M.C. (girl)	100	40	440
D.C. (girl)	84	63	463
K.G. (boy)	92	28	428
E.L. (girl)	133	115	515
E.M. (girl)	80	98	498
T.P. (girl)	119	145	545
J.P. (girl)	70	162	562
F.S. (girl)	119	173	573
S.H.H. (boy)	109	102	502
J.E.S. (girl)	98	138	538
J.E.S. (girl	106	120	520
W.R. (boy)	119	69	469

COMPUTATIONAL TABLE

CALCULATION OF SIGNIFICANCE OF DIFFERENCE

BETWEEN MEANS OF THE BOYS AND MEANS OF THE GIRLS DIFFERENCES

FROM INITIAL TO FINAL TEST

SD = 79 for total group from correlation sheet

$$SE_d = SD \sqrt{\frac{N_1 + N_2}{N_1 N_2}}$$

$$SE_d = 79 \sqrt{\frac{90 + 70}{6300}} = 79 \times .159 = 12.56$$

$$t = \frac{M_1 - M_2}{SE_d} = \frac{\overset{\text{Girls}}{476.43} - \overset{\text{Boys}}{446.11}}{12.56} = \frac{30.32}{12.56}$$

$$t = 2.41$$

Entering table D with 158 degrees of freedom one finds that a t value of 1.98 is significant at the .05 level and a t of 2.61 is significant at the .01 level. The t of 2.41 indicates significance at the .05 level but shows the difference to be "non-significant" at the .01 level. One could conclude that there is a very slight tendency for the girls to make a greater gain than the boys.

CORRELATION TABLE

CALCULATION OF BI-SERIAL R

BETWEEN SCORES (DIFFERENCES) AND BOY-GIRL CATEGORIES

Scores	Frequency Boy	Girl	Total Frequency
650 - 700	2	1	3
600 - 649	1	5	6
550 - 599	4	6	10
500 - 549	8	10	18
450 - 499	24	15	39
400 - 449	36	27	63
350 - 399	10	6	16
300 - 349	2	0	2
250 - 299	2	0	2
200 - 249	0	0	0
150 - 199	0	0	0
100 - 149	0	0	0
50 - 99	0	0	0
0 - 49	1	0	1
	90	70	160

Mean total Group $M = 459$ (from correlation sheet)
Mean Boys $M_p = 446.11$
Mean Girls $M_q = 476.43$
Percentage Boys $P = \frac{90}{160} = .56$
Percentage Girls $Q = \frac{70}{160} = .44$
$Z = .394$ from table 48 page 360
$\sigma = 79$ from correlation table

$$r_{bis} = \frac{M_q - M_p}{\sigma} \times \frac{PQ}{Z} = \frac{476.43 - 446.11}{79} \times \frac{.56 \times .44}{.394} = .383 \times .625$$

$= .239375$ or $r_{bis} = .24$ which shows only a very slight tendency of girls to make a greater gain than boys.

APPENDIX H

SAMPLES OF STUDENT WORK*

1. Student Logs
2. Case Studies
3. Film Evaluations
4. Newspaper Reporting

*These are exact copies of student work. They have not been edited. No notation has been made of errors.

SAMPLE OBSERVATION REPORTS IN SCHOOL OBSERVATION

Nursery School

The psychology class went to the Oklahoma Presbyterian Nursery School to observe the Four and Five Year Olds. There were thirteen children present, two being absent that day. They were having a free play period indoors because it was raining very hard.

Most of them were awfully noisy. One little blonde girl whom her teacher called, "Grandma," got into a chair and held a doll and wouldn't move. Neither would she talk to us, but some of the boys got wild. The little F-boy got a lump of clay and hit the little S-boy on the top of his head. The little S-boy added more clay to his lump and hit back at the F-child. He had real blonde hair and the clay left the hair on the top of his head green from its color. They were pounding each other harder and harder when the teacher came into the room and said, "Here, you boys. Stop it and go across the hall to play with the castle." They threw down the clay and ran across to the room where a pretty large castle with its moat was on a low table. They got down on their knees and started building the castle just as if nothing had happened in the other room. They were bragging how good they were at building a castle.

The largest child in the group is nearly six. Her father is a Southeastern faculty member. She crawled over a table and started talking to the boys in our class. The teacher said she was her only problem. She is an only child.

It was just like Arnold Gesell said. The Fours and Fives still need very watchful supervision. They tried to get attention.

The music teacher came and the children ran into the music room. It was marvelous to see them cooperate with her. They were responsive in

group singing. Again, it was fun dramatizing songs and in taking turns at leading and running around in circles and clapping hands to the music. America is their favorite song and they love to sing it.

Our psychology teacher said, "Listen to their voice control. Their pitch and rhythm are wonderful. They are so young!" A boy in our class said, "Listen to her--the teacher. It is wonderful for she is so old." She is going to be relieved next year because she is seventy. I enjoyed their music lesson, and I thought the teacher was good.

Four Years Old

The committee on children's literature read in our text that Four likes silly language so they read Wanda Gag's Millions of Cats:[1]

Millions of Cats--
They came to a pond
Mew, Mew! We are
thirsty! cried the
Hundreds of cats,
Thousands of cats
Millions and billions
and trillions of cats.

When it was read to the Fours, they went around saying, "Mew, mew!" and "Billions and millions of cats," over and over again, so we decided that they liked the poem. People should read a lot to little children, especially to the Fours and Fives because they like language.

---

[1]Mae Arbuthnot, Children and Books (Chicago: Scott Foresman & Company, 1947), p. 288.

Kindergarten

The O.P.C. Kindergarten was an excellent place to observe four and five year olds. We saw the children during their free play period.

I sat by some little girls who were playing dolls. They told me

their names and let me hold their dolls. One little girl discovered a doll that didn't have any panties on and she would pull up the doll's dress and say "Oh, Oh, she doesn't have on any britches." Then she would just laugh.

We went in another room and watched two little boys playing with a castle. They put on quite a show for us. They banged the walls on the castle over and shouted, "An attack! We've got to--got to fight," so they boxed one another for a little while then began to build the wall back.

The music teacher came and they had their music lesson. The children could sing remarkabely well for five year olds.

I think it is a very good idea for children to attend kindergarden, because it trains them in many ways. They learn to get along with other children, they learn to follow directions, they build readiness for reading and other first grade activities, and they learn to give and take in a more social way.

The Six Years Old

The Six Years Old Committee brought six pupils from Mrs. Reynold's First Grade Room at Washington Irving School for our psychology class to observe. They were so cute. They made us all want to be first grade teachers. They sat up in front of the class and the committee interviewed them. They answered all the questions and it was the most interesting lesson we have had.

It was in January and the kids were all dressed up in their Christmas presents. The little girls had on caps with fur trims around their faces and pretty new sweaters. The boys had on bright jackets. They looked darling.

Two of the most interesting ones were Carlos and Mary, twins, who were born in South America. They flew to Durant two years ago. They can speak Spanish and German even better than they can speak English. All of the children went to Sunday School except Carlos and Mary. They said that their mother didn't like the Sunday Schools and Churches here. It worried us until our psychology teacher found out that they were German Lutherans and couldn't understand our churches.

Kathy Oge was the largest child. She liked everything to eat, especially greens and whole wheat bread and yogurt. Ske kept all the health rules.

Madge, a member of the committee, asked the children if they had a boy friend or a girl friend. Everyone but Kathy did. Mary said that Kathy did have a boy friend. They argued a little bit over it and Kathy asked Mary who it was. Mary just said, "Carlos." It was so funny. Carlos is her twin brother and he is small and Kathy is large and well developed.

They wrote on the board so that we could see their muscular co-ordination.

We gave them a color book and a box of crayolas apiece. When the bell rang, they didn't want to go back to their school.

Grade I Observation

A little boy in the first grade was given a test by his teacher to find out how well he could see. The teacher knew he had very bad eyes. The boy wore thick glasses. When he took the test through the machine and the teacher found that he saw the objects through only one eye, she knew why he was having a reading problem. His other eye was completely unused. The boy seemed fairly happy and he cooperated with the teacher.

Grade I Reading Class

The children read silently the first page, then the teacher asked questions. She told them to read with their eyes--some were using their lips! One boy had trouble reading and the teacher used some phonetics in helping him to pronounce Clean. The other children drew pictures of their pets while this group was reading.

Grade 1

This incident has for its characters two little girls named Sharon Nevil and Sharon Wheeler, both six years old, and both enrolled in school for the first time. They met for the first time just outside our apartment. Starting the conversation, Sharon Nevil asked Sharon Wheeler her name. Sharon Wheeler replied that her name was Sharon. Sharon Nevil, placing her hands on her hips in an expression of jealousy and disgust, said, "My name is Sharon, too, and there are just too many Sharons around here. Something just has to be done about it."

This was a very amusing situation as well as a very typical reaction for a child of that age.

On page 119, in the Six Year Old Chapter, can be found the explanation of this situation. The six-year-old insists on being first in everything.

Grade 4

Today, we saw a boy who has reversals in both reading and writing write his name. His principal brought him to Miss Sally for her to diagnose his trouble. He wrote "Joe Bumpass" with five or six letters reversed, reversing both J and E in Joe. In one hour after he had been shown how to write his name correctly, he could write it that way. He

didn't seem confused like he did when he first came. He will be taught kinesthetic exercises to learn left-to-right movements.

Grade 6

When we were observing in the Sixth Grade room the other day, one of the boys kept calling his teacher "a silly old goat." She asked them to take out their tablets and write their spelling words and he said, "Oh, you silly old goat!" I thought that maybe he could not spell the words but he did. I think he is a pretty good speller. The teacher just kind of smiled and tried to ignore him every time he would call her "a silly old goat." I wonder why he did it.

Grade 2*

Client: Burl Kent Age 8 Grade: Second

Brothers 1 Age 2

Sisters 1 Age 2

Dentition:

Baby teeth few (back) Teeth out few (top front)

Permanent teeth few (back front) Gum condition redish rash

Shape of jaw long

Muscular Development:

Right or Left handed

Right or Left Legged

Arm muscles Hard or soft

Leg muscles Hard or soft

---

*Dan made an elaborate observation blank of his own which he used for observing a student in second grade. He was impressive as he used it. The blank is reproduced in full even to the misspelled words.

Characteristics:

Eyes bright — Nail bitting no

Face good color — Thumb sucking no

Legs straight — Knee knocking no

Sit straight no — Stand straight yes

While at work does he change from sitting to standing? no

Urge to action for short or long time. short

Favorite toy guns

Game cowboy

Keep time to music. Didn't know what kind of music he liked as they had no radio at home.

Like to climb and jump from heights Likes to climb trees, but not to jump from high places.

Self dependent yes — Dress himself Yes

Brush teeth yes — Tie his Shoes yes

Comb hair yes — Wipe dishes yes

Mind the baby Yes, he told me about the twins

Nutrition:

Favorite food Beans — Dessert Strawberry jello

Does he like any of the following: (check)

Spinach	x	Cottage Cheese	?
Peanut butter	x	Apples	x
Orange Juice	x	Ice Cream	x
Carrots	x	Cheese	x
Eggs	x	Peanuts	x
Oatmeal	x	Beef	x
Milk	x	Pork	x

Observation

He was doing his art lesson which was Hallowe'en art when I came into the room. He was drawing a Hallowe'en pumpkin with face and all. He writes even, he makes his letters all sizes. He was willing to talk to me during recess, then went out to play. Spent all the time on the swings; pumping and helping push others. After recess he had his reading lesson. He reads slow, stumbles over some of the words. Answered questions his teacher asked about the story they were reading. While at his desk working he would stoop over. He enjoyed showing you his work.

Buel is the largest student in size but has very good control of his walking and running. He has a speech defect which he will out grow. His teacher tells me his is very cooperative, turns his lessons in on time. She has only had him in her class for two weeks for he is a transfer student. He seems to have adjusted himself to his new classmates and teacher.

When we went to the fourth grade room to observe, the children were just going out for recess. We met two little girls in the door. As they hurried past us, we heard one say to the other, "Here come all those college students with those long sheets of questions. Let's hurry out so we won't have to answer them."

We decided to put away our observation sheets for awhile and write from memory.

Grade 4

Child Observation Log: Case No. 1

Client: James Dobbins

Age: Seven Grade: Fourth

Situation

While I was in this room, I had the chance to observe James for an hour, which covered two situations, e.g. reading and participating in classroom activities.

Observations

James attracted my attention when I first settled down to look over his class. He has light brown hair, pretty blue eyes and a general sweet expression. He is also outstanding physically because he is the largest boy in the class, although, he is very well built. James was very talkative; tellimg me everything from the fact that he had on a new shirt which was a present from his mother to the fact that he had missed school two days because his aunt died. He volunteered all sorts of information such as: his birthday is in July, he likes "Skip to My Lou" best of their games, he had brushed his teeth that morning (and to quote him,".... and I think I will brush them tonight."), he doesn't run in the building because it would be breaking a safety rule, and he dresses himself most of the time.

I loved being with James because he is not yet at that exasperating age when you have to drag everything out of them. From some of the little things that he did and said, I could see that he came from a home in which the parents really were interested and cared about what he was doing. His mother had made him a costume for the Hallowe'en fun that afternoon.

James seems very well adjusted, well-liked by his peers and teacher. His is imaginative in his drawings, using vivid colors and unusual

subjects. His complexion is healthy, his fingernails clean, and is left-handed. James is attentive, cooperative and willing to work.

His teacher's remarks: James is an average student who tries very hard. His Christian home life definitely shows up at school.

Grade 1

Client: Ronny Age: Six

Situation

It was in the first grade room of Mrs. Ellison's when I meet Ronny. He has a little brother and sister and he voluntarily told me about his cat and how she caught a mouse. When I asked him about bedtime, he said that he hated to go to bed and he couldn't go to sleep anyway because his dog barked outside his bedroom window. He said that he loved to eat and then showed me his glistening small white teeth. His gums seem extremely light for a child of his age.

Ronny was doing his writing lesson which was about average. That is, he was on the second page of "o's" as most of the children were. Ronny was in the second reading class. The boy sitting next to him was in the same reading class, but was ahead of him in writing; he had already written four pages. However, Ronny bragged that he had beat him one day.

He brought out his Halloween mask twice and Mrs. Ellison had to remind him to wear it only on the playground or to wait until the party that afternoon.

Ronny was glad to talk and I didn't have to coax him a bit.

Observation

Mrs. Ellison explained to us when we went out on the playground that

all her pupils were already six. She doesn't have any seven-year-olds.

Ronny was about the average size in his classroom. He needed a hair cut and his clothes were not the nicest nor the neatest in the room.

All the children loved their teacher and she seemed to have perfect discipline. Last year, she explained, she got new blond portable desks in her room and that they were helpful in teaching. She said that you could arrange them in so many different ways. The observation class didn't seem to put a strain on her. She acted like she had ten extra clumsy people in her classroom every day. She was quite collected, but of course the children were all starry-eyed.

The children were, of course, cute. I think that if you could be with them even a whole day that one could learn a lot about adult behavior plus child psychology.

Grade 5

Client: Jennifer Shipman Age: Ten

Grade: Fifth Age Range: One year

Situation

Geography class and play period. The children were in the process of having their pictures taken when we entered the classroom. Jennifer with her big sleepy eyes caught my attention. She moved slow and was not as alert as, Linda, the girl who sits just two seats to the left.

The geography lesson was taught different from what it would have been in my grade school time. The children opened their books and read a paragraph then answered the question the teacher would ask. Two-thirds and sometimes more of the hands would go up when the teacher asked her question, three of them forgot the answer when called on to answer. Jennifer only raised her hand twice. She was never called on to answer.

She read her book and seemed to give good attention. She didn't seem to be aware that the student observers were in the room--while Linda was very conscious of them. Linda did several things to attract their attention. She was one of the three who didn't know the answer after putting up her hand.

The children with the help of the teacher read and studied the lesson in class. A few days later I heard another teacher say that if a child studied his lesson before class there was no need for him to come to class--that she let them read it in class. This may be a modern trend in teaching but I think it could be over done.

When the children went out for recess Jennifer stayed in the room working on her arithmetic lesson. The teacher sent her out to play then told me that Jennifer had been ill the night before and was unable to get her lesson. She also told me that she was a little slow but that she did her work. She wasn't feeling well today.

Jennifer's mother is from England and works as a nurse in one of the local hospitals. Jennifer was born in England. She is a little small for her age but did not appear undernourished. She has lovely healthy looking hair. She did have several decayed teeth with one missing. The permanent teeth are growing straight with no cavities.

Jennifer is a normally adjusted child. She fits in well with her friends in the room. On the play ground she is in on all the play. She is not the bold agressive type, but a little reserved and seemingly a sweet, mild-tempered child.

Grade 1

Client: Beverly Kay George Age: Six

Grade: First

Situation: Writing

Teeth: One tooth, in front was loose and she opened her mouth and wiggled it with her finger to show me that it was loose. Beverly's teeth were well kept and none was missing.

She dressed herself, but her mother combed her hair. Beverly's hair was long, blond and curly, She was dressed so sweet. She was very talkative, she told me all about her baby sister having the mumps and her mother had just come home from the hospital but was still in bed. She had such a sweet and pleasant voice. Her eyeballs were large, bright, and clear. She did eat breakfast. Her favorite food is jello. She isn't sick very much. She likes for the boys to bother her during recess when she and some of her friends are playing house. She likes to bathe. She was right handed. She likes her teacher. She sat up straight in her chair and kept writing as her teacher had instructed when I was writing down what she had said. When the bell rang for recess, she put up her pencil and paper and I helped her put on her coat. She smiled very sweet, looked at me and said, "Thank you." Then, she pushed her chair up to the table and left very quietly. So many left their chairs away from the table, just trying to be the first outside. Some of the boys and girls played well together during recess. A number of the children wore their hallowe'en faces and costumes during recess. Recess lasted for twenty minutes. The children were very noisy in getting seated, a lot of laughing and cutting up. The girls were quieter and studied better than the boys. There was a lot of wadded up paper

on the floor around some of the children's desks also a number of crayolas on the floor.

During the writing class there was quite a bit of noise. The boys were definitely attention getters. One boy was waving both his arms in the air over his head. Two little boys stuck out their tongues at each other and would always look around to see if they were being noticed. One little boy enjoyed sucking his thumb. A number of the children kept pencils in and out of their mouths. Several enjoyed visiting with their neighbors. All the pupils could write very well, I thought, all respected and responded to the teacher's instructions.

During the reading class there was a lot of twisting, scooting up and down in chairs and moving around in their chairs. All the children called out the words real loud whenever the teacher held up a card. Two boys were not paying attention and were scoffing during the class and she had to move them apart.

I really enjoyed this new experience.

Grade 4

Client: Dana Williams Age: nine

Situation: Arithmetic Lesson

Observation

Dana was the largest person in the class. Even though she was taller than the others her clothes fit. It looked as if she wore a woman's size shoe. She has all her teeth. Her eyes are bright and clear. Dana is right handed. She likes to eat and has no favorite food. For breakfast she had eggs and cereal. She likes to read and to work arithmetic better than her other subjects. She was reading when we came into the room although there was a lot of disturbance and the other

children were roaming about. She was good at math and won her row quite a few points for getting the problem worked first in their math game.

The amazing fact is that my selection for Summary II was very outstanding in ability when called on. She had an indifferent expression on her face but when asked to read she was the best reader in the class. She acted as if she had no interest or was bored. I am wondering if this could be that she actually has a higher I.Q. than the others in the class, but I can't understand why she didn't show some signs of interest.

Out of Class Observations Group According to Age Level

Clients: Ann and Sue Cornell Age: two year old twins

Situation

They were in the bedroom behind the bed playing with their aunt's perfume.

My Reaction

The children were being normal in their actions because they were curious to know all about the bottles and their contents. I wondered if maybe they were aware to a certain degree that they were playing with something that they shouldn't have, and, therefore, they were playing behind the bed.

Was this action normal?

According to the text on page 357, children want to explore everything around them so they can learn the properties of different objects.

Observation of my son--2 1/2 years old.

After I took Jimmy's bottle from him at one year, he started carrying one of his blankets around. He would suck the satin edge of it.

He wouldn't go to sleep until he had it. It worried me quite a lot. I didn't know whether to take it from him or just let him have it. The situation really embarrassed me at the time. This went on until he was about 18 months old. One night we left his blanket at my mother's, therefore, Jimmy had to go to sleep without it. Since then he has never wanted to suck it again. He never sucks his thumb, either. From the study of psychology since then, I believe he did need this blanket for security, or perhaps he needed to do more sucking. Another observation is Jimmy's fear--He is in a stage right now that he is afraid of bears. He'll be in another room and he'll come running to me yelling--"Mommie, bear!" He is really frightened because his little heart is pounding so fast. I didn't know where he became afraid of bears. The only thing we have done is read to him the story "The Three Bears," I was worried about it, and a bit puzzled as to what to say to him, but Dr. Gesell tells us "Fear is natural and normal, and often has a wholesome influence on the life of a growing child. They diminish with increasing age." p. 296.

Observation Report

Keith--3 years 11 months

This is my little boy. His imigination seems to run away with him. I asked him if he went fishing with his grand-daddy and he said he caught a 54 lb. catfish. Then he had to go into details and tell me just how he caught it. He didn't even go fishing, besides catch a fish that weighs 54 lbs. It was a funny story to me, but I don't know if a child of that age should tell things like that.

Situation:

Mrs. Meadow's little 16 months old daughter wanting to climb the dormitory stairs with some girls. Mrs. Meadows invited the child to come down. The child voiced protest by crying, "No, no, stairs!" Mrs. Meadows substituted, "Daddy's coming home," for the pleasurable and exploratory trip up the stairs. With calmer voiced assurance that nicer things were to happen, the mother changed the desire of the child.

Personal reaction:

I was impressed with the good psychology in action.

Psychological basis:

Pleasure and exploring

Child---Jimmy Carson
Age:----5 1/2
Sex-----boy
Grade---Pre-school

Jimmy had penumonia

Situation

He was playing with the hose in the yard when his mother said for him to turn the water off and come into the house. His mother took a yard stick and went out there and demanded that he come in. Jimmie stood there with the hose in his hand and said, "You lay that stick down and I will lay the hose down." His mother did the easiest thing which was to lay the stick down and jimmie did as he had promised--laid the hose down. His mother says that he is very cooperative and obedient when no one is there, but he does hate to be corrected when someone else is present.

My Reaction:

I did not think he was a bad boy at all. In fact, I approved of his attitude toward the stick.

Kim (10 1/2 months) was pulling books from the book case. I said, "No, no," but she just laughed and went right ahead. I put a chair in front of the book case and gave Kim a toy to play with. She was very happy with the toy until she discovered something else to get into.

Subject: Bobby Bryan, age 5

Situation: Bobby came by our house today looking for ladybugs. Bobby goes to my church, and I'm his girl-friend, and sometimes he comes by to see me nearly everyday. He wanted to know if there were any man-bugs. I told him no, and he asked me why. I told him there were boy and girl bugs just like people, but there were no bugs called man-bugs, and ladybugs was only a nick-name for that bug. He left and still wanted to look for lady-bugs. My explanation didn't seem to dampen his desire to find lady-bugs at all. I hope that this was good psychology. I didn't think it necessary to go into further detail of boy and girl bugs, and I just tried to explain to him that lady-bugs don't refer to the sex of the bug and that bugs are the same as people in that there are only two sexes.

Cliente---Greg Thomas

Situation--The little boy is in nursery school and insists that the teacher look at everything he does. He won't continue playing until she has noticed what he is doing (age 3).

Personal Reaction---Greg seems to be in need of recognition for his accomplishments. He needs the teacher's approval before he is satisfied and can continue with his play. I think this is good psychology as it brings out the basic needs of a growing child.

Client--Charles alias Davy Crocket
About 5 years old.

Situation--Out in his front yard playing ball (football, baseball and basketball all with the same ball) with his older brother. Played well together. Charles had good coordination, kicked the ball well. Wears a Davy Crocket cap all the time no matter how hot it is. Real cute. Fascinating to watch.

Client; Mike De Woody
Age; 7

Situation: Lying in the dark, he was certain that someone was looking in the window. It was only a floor lamp standing by the window, however.
My Reaction: a seven year old normally has some fear of danger awaiting him in the dark and he feels the need of an adult to reassure him that he is a safe boy. This behavior is commented upon as being normal on page 129 of the text.

My experience:

During the dress rehearsal for Frazior's Dance Recital, I played for 4 year old Noland Maddra to sing "Davy Crockett." He came on stage when the music began, but he wouldn't start singing. Finally, I stopped playing and immediately he looked over my way and ordered "Keep the music going!"

Name: Joyclyn Wilcoxson
Age: 4 yrs old.
Situation: Movies
Reaction: Couldn't sit still, discontented, wanted to go to the bathroom every few moments, ran up and down the aisles, wanted to talk to all the other kids in the theater.

Comment: In my opinion she's too young to be subjected to movies.— Couldn't have expected anything else from her.

Name: Pat Korner
Age: 4
Situation: Church Program

She sang until she noticed she was being watched and then she tried to hide behind the other children. She held her little hands together and bent her head down over them.

Situation:

The boy I observed was trying to recover a baseball from a neighbor's yard. The neighbor obviously didn't like children (he seemed like the grouchy type) so the youngster was afraid of him. He solved his problem by waiting until the man's attention was occupied, and then he retrieved his ball.

My reaction was that I felt that I should help the boy, yet he seemed very capable of handling his own problem. He was about 7 or 8 yrs. old.

Signs of Developing

I observed a four year old boy. He was trying to turn off a light and he was not tall enough to reach it. He took the curved end of a fly-swatter and he was thereafter able to turn off the light. I believe that this action was perfectly normal and it shows that this little boy is learning to reason.

I observed and talked with a little girl in the third grade who was at the park. She had been chasing birds, and she said, "I could have a

parakeet, but I don't want one. Everyone has one, but I want one of these robins."

Maybe the little girl could not really have a parakeet, and she was rationalizing by saying that the reason she didn't want one was because everyone else had one, or maybe she just wanted to be different. Possibly she was using this idea of being different as an attention-getting device.

Situation: Two girls selling Cool-ade.

The two girls were in about the fourth grade and were trying to sell cool-ade to everyone who came along. When they asked me, I told them I had no money with me. They wouldn't believe me until I told them I never carried money to school with me. They asked me if I had been to school. When I told them I had, they said, "Oh! you poor kid, would you like some free?" I told them I didn't believe so, and they said, "Look, we have plenty of money, we can afford to give you some free." They were awfully cute girls but I was sorry about their attitude toward school.

Davy Crockett
5 years old

He was shooting his guns at his white rabbit, saying, "I guess that takes care of some more of you dirty Indians." I asked him if the ears weren't a bit long for Indians. He replied, "Boy, you must not know much about Indians." After shooting a few more times, he called to his dog, "Come on, Bullet." I told him Davy C. didn't have a dog. "I know that, I'm Roy Rogers now."

Name: Billy Saunders

Situation:

About two weeks ago Dr. Ellen Kelly, Head of the Girls Physical Education Department at Oklahoma University and I were observing the Reactional Therapy at the mental hospital in Norman. In the children's ward, this little boy, who was about 6 years old, would spit on his nurse everytime she would start to leave. This unusual action was analyzed to see if the nurse was provoking the boy, but the doctors found that the boy's action was because he liked his nurse and didn't want her to leave and that was his way of expressing himself. In observing this case, the cause of the boy's illness was probably due to the lack of affection, attention, and security that he needs to grow normally. I realize this is an extreme case, but I thought it was very interesting and especially shows the need for understanding and helping children.

Report

Observation of Girls at Campfire Meeting

This meeting was a meeting of the Odaha Unit in Atoka, Oklahoma. The leaders are Mrs. Edison Struck and Mrs. Malone.

I observed this group from the psychological point of view. The girls' project for this week was the making of camp stoves out of used coffee tins with cardboard inside and paraffin poured over the cardboard. They were served refreshments of cookies and pop by two members of the group.

From the psychological standpoint, I think the main objectives of the meeting were satisfaction in a job well done, the ability to put forth continuous effort in work and finding their ability to create.

There was, also, a promotion of social growth, self-control, and consideration for others. One could readily detect the fact that association with the counsellors and other girls was doing much to promote social adjustment. The girls had learned to get along with others, also, a very high standard of personal relationships.

One definitely should observe groups such as these to learn the traits, feelings, actions, and attributes of the child's, or growing child's, mind.

Campfire Girls

We met with the Campfire Girls Jan. 12. Mrs. D. T. Slaughter was in charge. There were seventeen girls in the group. They are becoming boy conscious.

As the girls came in, there was much giggling and just a trace of showing-off.

The meeting was called to order, after about five minutes of giggling, whispering, and scraping of chairs. They have a very short listening span.

This meeting was to decide what was to be done about the "birthday project." The theme of this project is "Let's Be Different Together." The girls are really interested in this project. The girls will be dressed in costumes from other countries and tell how much they have learned about that country.

One youngster, Margaret, seems to be very serious and offered several suggestions that were really good. The leaders not only let them make the suggestions but also let them decide how they will be carried out.

The girls also discussed the Council Fire. They want a party in

the evening. (They are getting too grown up for afternoon affairs.) They were warned of the extra trouble and work involved but everyone seemed willing to work for the evening affair.

The group sang two songs in rounds. They were very self conscious and slow in getting organized. They sang two as a group and were much faster.

They are interested in their group and apparently most of them are workers, but they are very juvenile. They are awfully nice kids and will be nice young women in a few more years. I sure enjoyed the visit.

Bluebirds

Bluebird, a member of a junior club of the Camp Fire Girls.

The Working Bluebird group at Thunderbird School, Atoka, Okla.

Time: Monday 3:30 in the afternoon

Leaders--Mrs. John Kelly Fain Jr. and Mrs. Willie Bowman.

Members--Priscella Bowman, Betty Brown, Betty Marsh, Patsy Jones, Carmen Fain, Gayla Miller, Virgina Lowe, Alice Brown, Jo Ann Crowell,

Ages range--from seven to nine years of age

Situation: Making musical instruments out of scrap material.

Summary--The girls all enjoyed working together and took a great interest in their work. This age group is a wonderful one to observe.

One girl was smaller than the others of her age and looked as if she could use some vitamin D. Another girl seemed to want her work to be very perfect and had the leaders to look at it several times after each detail was finished. Another girl was very slow. Individual differences were marked.

Camp Fire Girls

There were sixteen seventh grade girls at the meeting, also Mrs. D. T. Slaughter and her assistant. The girls showed every sign of simply being average adolescent girls in the process of growing up. During the meeting there was a lot of whispering, laughing, kinda noisy, but were very pleasant and cheerful. The president took charge of the meeting, the secretary called the roll and each member answered to their Indian name and if they were wearing their club uniform. She also read the minutes of the last meeting. Then there was quite a lengthy discussion of new business relating to a party the last of February. Everyone or several girls were so anxious to express their ideas that they were all talking at once and each getting louder than the others. There was excessive laughter and clapping of hands. Mrs. Slaughter suggested a book by Nancy Drew and one girl remarked that she thought it was corny, she wanted something more romantic and dealing with boys. All the girls became very loud, when romance and the opposite sex were mentioned, as they were more concerned about this. It was rather difficult to get the attention of the girls as they kept whispering, laughing and raring upon their chairs and letting them hit the floor with a bang. They watched the college students and couldn't sit still in their chairs. They were unable to come to a decision as the girls were too excited and unable to come to an agreement.

The song leaders took charge and lead in the practicing of songs that they were working on, which was required to pass to the second rank. They divided the girls in half and sang two songs in rounds. There was excellent cooperation and they sang well. Then two songs were sung by the entire group.

There was a lengthy discussion concerning their birthday award

project as to how they would answer the roll call each using the language of a different country. There was alot of talking all at the same time, quite noisy, and several whispering to their neighbors and laughing. Following this they discussed what typical American song they would sing. Several of the girls were rather comical and suggested popular hillbilly songs at which everyone got a big laugh.

All the girls appeared to be extra healthy and normal in every respect. I surely did enjoy my visit.

REPORT: VISIT TO CAMPFIRE GIRL'S CLUB MEETING

TWELVE CLUB MEMBERS PRESENT. SHOWED SHORT ATTENTION SPAN, HAD INCESSANT SENSE OF HUMOUR, FRIVOLOUS ATTITUDE. SEEMED TO BE AVERAGE GROUP IN MOST RESPECTS. PROFESSED TO LIKE BOOKS OF "ADULT" LITERATURE. INTERESTED IN PLAYS, PARTIES, BOYS. FAVORITE READING WAS MRS. POST'S "ETIQUETTE." TV WAS NOT DISCUSSED. SHOWED LITTLE APPRECIATION FOR "SERIOUS" THINGS, SHOWED HIGH "GROUP," WAS UNABLE TO DETERMINE AMOUNT OF INTRA-GROUP LEADERSHIP.

REPORT: VISIT TO SCOUT MEETING:

ABOUT TWELVE MEMBERS PRESENT. DISPOSITION FRIENDLY, CURIOUS, ENERGETIC. DISCUSSED PROJECTS WITH LEADER, PRESENTED DEMONSTRATIONS IN "OUTDOOR COOKING," "SOIL CONSERVATION," ETC. GROUP BEHAVIOR WAS SIMILAR TO GIRLS. SHORT ATTENTION SPAN, MORE USE OF PHYSICAL ENERGY. SOME BUILDING EQUIPMENT WAS DAMAGED BY INEXPERT USE, BUT GROUP WAS APPROXIMATELY NORMAL.

Campfire Meet

Observations

There were sixteen members present.

The president called the roll to start the meeting. The meeting started at 4:10 p.m. and was to last until 6 p.m.

They sang four songs. The name of one was, Where is John.

They are classified in three ranks.

These girls were all in the seventh grade.

Every one was interested in boys.

They hope to win an award next March on their birthday projects.

Most of them tried to talk at the same time.

Each one is supposed to have on her uniform at each meeting.

They have a nice building, but it isn't completed.

Mrs. Slaughter was the nicest one of them all.

Client: The Seventh Grade Camp Fire Unit

Ages: 12 and 13 years old

Situation

The twelve girls came to the new youth center after school. They were all giggling. When they took their places I noticed that some girls rushed to sit with others. They finally settled down to a business meeting, if you can stretch your imagination that far. There were three girls that seemed to monopolizing the meeting. They all sat together. I noticed that the quiet ones generally were all in a group, also. However, Mrs. Slaughter explained that they all took an active part most of the time. They took up several items of business but nothing was very definitely decided. The president was quiet, however, she didn't seem to have control over the meeting too well. They sang songs between their surges of giggling.

Their main interest seemed to be boys and everything that was said had something to do with a boy in one way or another. Their ideal was

Kalid Fattah of Southeastern. He spoke to them last fall and they think they have seen the best the world has to offer. Anyway, he's their idol. They all want to tour Iraq, or better still tour the college. I noticed that some girls bit their finger nails. Some girls stared at the floor and seemed afraid to look up. On the whole, their complexion was smooth. Mrs. Slaughter explained that they had a Christmas dance for the first time this year. The leader in the room was Margaret, who seemed to take the lead in discussions and gigglings. The girls followed her pretty well. However, she seemed to be a bit "bossy." The show-out of the group was Christi. I noticed that she was not as neat-looking as some of the others, but she sure got the attention, she demanded it. She talked too loudly and she giggled incessantly. She passed notes after being called down and she talked across the room all during the meeting. She got up and walked across the room to gain attention. When Mrs. Slaughter asked about something, she <u>always</u> knew everything about everything. She didn't bring her own materials, but she grabbed the girl's next to ner. She was not well-kept and not as attractive as some, but she got the attention she demanded by being rude. I wonder just what is lacking in her home life to cause this situation.

Out-of-School Project With Adolescents

The ten o'clock psychology class interviewed boys and girls from eleven to sixteen years of age in order to compare their interests with the theoretical material on adolescent interests. The members of the group who agreed to do this selected a boy and a girl to interview. They had an interview blank[2] with spaces for the responses.

This activity gave the subjects more pleasure than any activity in which they engaged. Some of them asked for several interview sheets.

For background material they read Chapter VII "Adolescent Interests" in Garrison's Psychology of Adolescence.[3]

It was stimulating to help boys and girls who would not talk at first to relax and supply the necessary information. One subject wrote,

> The client at first seemed hesitant about answering the questions. She seemed greatly relieved when I told her that her name would not be put on the paper. After I started talking to her, she seemed to become interested. She was embarrassed when she told me her favorite magazines were the love story type. In many respects she seemed to be quite the typical adolescent. By that, I mean that she was self-conscious and was evidently in the giggling stage.

The same subject interviewed another girl. Of this one, she wrote in her log,

> The client seemed very much at ease and was very willing to answer the questions on the questionnaire. She seemed more mature. I was somewhat surprised when she told me that she liked classical music better than any other kind but she seemed quite sincere with the answer.

One subject attempted to "type" her client but gave it up before she completed her interview.

> My client was an eleven year old neighborhood friend, who is nicknamed "the tomboy." She said she felt more comfortable in a pair of jeans. Her favorite pastime or recreation was playing ball with the boys, going swimming, but on Saturday liked to dress up and go see a movie.
>
> She has an older and younger sister who she says are sissies because they never want to play rough like she does. She has a sweet personality but has many interests that boys do. She said everyone said that she should have been a boy instead of a girl. She came over and talked all about the big league baseball games with my husband, she knew all their names, batting averages, where they are from, and other personal data.
>
> In the last few months I've noticed a change in her attitude toward the opposite sex. She told me that she didn't have a boy friend but shortly before, she and a friend were sitting on my front steps arguing over who had the most boy friends, and the likes and dislikes in each of them.
>
> She said she didn't like to read anything but funnies in newspapers. She likes hillbilly music. Rock Hudson is her favorite movie actor.

> The boys came by and said she had been chosen to play softball on their side and they were ready to start playing and off she went.

Interests Interview With Adolescent Boy

> My interview with a big boy who is 6'-1", 162 pounds, only thirteen years old, was rather short as he had too many activities planned. (He's my brother-in-law).
>
> He doesn't like to listen to radio very much when it is hillbilly music or a ball game. He lives for sports of all types, football, basketball, baseball being his favorite.
>
> He enjoys sitting and reading comics by the hours and then scaring his little sister by telling her the horror stories he has read. The duck family and Dagwood and Blondie, western and horror are his favorites. He laughs and makes fun of all the love comic books.
>
> He is developing an interest in girls but is never doing to like any certain one. He enjoys sitting and going to movies everytime the feature changes but is most interested in continually practicing baseball as he plans to make the big league team if he ever get old enough. He says he big enough to pass for an eighteen year old boy and people laugh when he says that he is thirteen years old.

One subject discovered a celebrity in his own right. Of him he said,

> Client seems to like sports and wants to study to be a coach. Ed Price at Texas U. is his favorite coach. He reads the sports column in the Denison Herald and Dallas News daily, and is an outstanding authority on sports matters. Is interested more in football than in girls. Plays football, basketball, and is currently playing summer baseball in Denison.

After the interview sheets were collected, one of the young men took the sheets to make the tallies so that the totals could be made and the results compared with the research data.

There were interview sheets from 58 boys and sheets from 65 girls, making a total of 123 questionnaires to examine. The job was long and tedious but the committee stuck with the tabulation and examination until the totals could be counted. The tally sheets showed the wide range of interests, favorite columnists, and favorite newspapers which gave the

group the idea that, by the time boys and girls reach the age of adolescence, a very great range of interests, and, also, a pronounced sex difference will be noticed.

The favorite programs, and all other favorites, were listed in order of frequency of choice and the tendencies charted. For example, it was discovered that every boy read a daily newspaper from "nearly every day" to "daily." Four girls never read a newspaper. Geographical location influenced the choice of the newspapers. The fifteen magazines most widely read were Life, Look, etc. Such a list was discovered to vary considerably from locality to locality.

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[2]Adapted from unpublished materials by Emi Belle Bolton.

[3]Earl C. Garrison, Psychology of Adolescence, Fourth Edition (New York: Prentice-Hall, Incorporated, 1951), pp. 132-156.

Interest Questionnaire

Psychology 323

Student's Name_____

Client's Sex_____ Client's Age_____

Directions: Interview a boy and a girl between the ages of 11 and 16. Use the questions here presented as the bases for studying their interests as revealed by their reading and radio listening. Compare their interests plan with the information about adolescent interests presented in your text. Compare the reading and listening activities of the boy interview with those of the girl interview.

Report on Reading and Listening to the Radio*

1. What daily newspaper do you read?_____
Do you read it (underline the correct answer): daily; almost every day; occasionally; do not read a daily newspaper.

2. What section of the newspaper do you read most regularly: (Put the figure 1 in front of the section read most regularly, the figure 2 in front of the section read next most regularly, and a 3 in front of the next)
( ) society section ( ) sports ( ) advertisements ( ) editorials
( ) comics ( ) front-page news stories.

3. List in order of preference three of your favorite columnists:
(1)_____ (2)_____ (3)_____

4. How often do you listen to the radio? (Underline the correct answer.) Daily; almost every day; occasionally; do not listen to the radio.

5. What type program do you like best? (Put a figure 1 in front of the type program you like best; a figure 2 in front of the type you like second best; a 3 in front of the type program you like next best; and so on.) ( ) Adult comedian (songs, jokes, etc.); ( ) adventures of cowboys and western heroes; ( ) classical music, ( ) hill-billy music; ( ) familiar songs; ( ) swing music; ( ) news broadcasts; ( ) drama of classical type.
Name any other type program which you especially like:

_____

6. My favorite news commentators are: (Name two or three in the order of preference.)
(1)_____; (2)_____; (3)_____

7. List the magazines you read, in order of preference: (1)_____
_____; (2)_____; (3)_____

8. Give the author and title of one magazine article you have read recently:_____

9. How often do you watch TV? Daily; occasionally.

10. What is your favorite religious program?_____

*Adapted from unpublished materials by Euri Belle Bolton.

Films

While firsthand experience is an indispensable tool of learning, vicarious experience is also indispensable. In the child psychology class an attempt was made to provide a balance of firsthand and vicarious learning experiences and to guide in the development of the ability to utilize effectively all of these experiences.

Films were used as substitutional means of furnishing experiences with children.

The members of the experimental group often reacted to a film in a dynamic way. One group asked for a second showing of High Wall. Because

the psychiatrist speaks as the action advances, some of the best discourse was lost and a feeling of dissatisfaction was experienced until after the film was seen again.

Film: High Wall

It is hard to realize that any person should think himself wise enough to pattern completely the lives of others.

Client: Ada Adams Age 12

Grade 7

Situation Took place at home and at school

Remarks: It all started out with Ada being an isolationist. She did not have any friends and the way it seemed she did not care for any. The main reason for Ada's ways were she only had one dress and she had to wear it all the time. She was ashamed because all the other children had decent clothes and she had nothing. Her mother played a very dull part in the picture. The mother showed no affection toward Ada. Since the father was gone all the time, he played no part in Ada's life at all. He was more or less a stranger. The child had talent but never had a chance to use it. Mother wouldn't help the child. All she would do is just nag all the time. The child was very mature for her age both physically and mentally. The way Ada had to wear her hair didn't appeal to her. Ada's marks were bad because her mother made her work all the time and Ada had no time to study. This was all settled by Ada's teacher. She helped Ada from this panic by the use of Ada's fine drawing. I think this situation was very well handled by the teacher.

Prejudice: Mental Hygiene
"The High Wall"

Too much discipline and not enough love from the parents produce an infectious disease in the minds of their children.

"The High Wall"

Compensations for feeling of inadequacy for Mr. Gregory. Mrs. Gregory follows pattern set up by husband. Too much discipline--not enough love. Father never gives explanation of why. Prejudice is a crippling disease which is contagious and taught. It feeds on insecurity, unwanted, and unloved. The final result of prejudice is hate.

Client Thomas Gregory Age 18

Situation Study of his life (Movie)

Remarks: Tom was more or less a puppet of his father. In this family the father was the voice of authority. When the child was a small tot he always played with the Poles. His mother and father were against this because they hated the Poles. Mother and father made a bad mistake because small children like to copy and can be wrong. The parents by nagging all the time led the kid to hate the Poles. The hatred must have been passed down the line in this family. This also held the father from getting ahead on his job. The father and mother had no reasoning powers whatsoever. The boy is in his late teens and he still hates the Poles. The only cure I can see for him at this late stage is to get drafted into the army where he has to live by rules and regulations strictly and I think he would turn out fine.

Film:

Drug Addiction

In my opinion, this film just scratched the surface. Hardly anything was said about a narcotics lasting effect on the body. Also nothing was shown about the boy "sweating-out" the cure. I have read accounts of addicts being cured, and it is probably one of the most horrible experiences that a human can endure.

This film was mild in the effect that it merely arouses the curiosity rather than instilling the dread of drug addiction in the mind.

I believe the raw facts would be more effective for college students. We are mature enough that we don't have to view films through rose-colored glasses.

However, it showed perfectly the harmful effect of society's [Sic] opinion of the individual dope addict. This is a factor we seldom consider.

Case Studies

Case Study 1

The experimental group made case studies of a child in order to understand as many aspects of the child's development as possible and to learn how to gather information about children from many sources.

One of the subjects became interested in Van, a first grade boy in a downtown elementary school. After a visit to the home of the foster mother, the subject told the story in the first person in an appealing way. There are many errors in English composition, but the experience has psychological import.

The Case of Van

Van
Date of birth: December 11, 1947 Grade 1
Intelligence: Otis Quick Score Nonverbal I.Q. 119
Health: Eyes normal; Teeth good; Hearing normal; Well developed physically for his age.
Height at beginning of school: 51 inches
Weight at beginning of school: 63 pounds
Childhood diseases--none
Had polio vaccine in April. Has had all shots of immunization offered for children

Early Childhood Measurements

	Age 1 Mo.	Age 2 Mo.
Neck	7 1/2"	10"
Length of foot	2 1/2"	3 1/2"
Ankle	3"	5"
Knee	2 1/2"	7 1/2"
Back of Knee to heel	2 1/2"	4 1/2"
Calf of leg	4"	8 1/2"
Wrist	2 1/2"	4 1/2"
Neck to end of middle finger	8 1/2"	12"
Head	13 1/2"	15 1/2"
Hand - Thumb	3/4"	1"
Little Finger	3/4"	1"
Middle Finger	1 1/4"	1 1/2"
Other 2 Fingers	1 1/8"	1 1/4"

Home Background

Van is an adopted child. He lives with his adoptive parents and a younger brother who is the parents own child. The parents are in the middle bracket economically. Always able to have the necessities and a few luxuries. The mother is an ex-teacher. The father is a building contractor. Both parents well educated.

The history of Van as given to me by his adoptive mother is as follows:

Van was born December 11, 1947 about 2:30 P. M. in a hospital in Dallas, Texas. He weighed 6 lbs. at birth.

During the birth, some secretion got into the baby's lungs--giving him a fever. He had this fever for several days. Being a weak baby,

the formula was too strong and gave the baby dysinterry. With both working against Van, he got down to 4 lbs. He was kept in an incubator and after weeks he began to show signs of improvement. The nurse in charge of the babies said she expected him to die each night. She prayed for the little thing to live since we wanted him so very much.

The parents were in their early 20's--they were of good health. The doctor said he had examined both and neither had a disease. She was small, blonde-reddish hair and fair complexioned. He was a rather tall, slender man. I did see the mother, but never the father. The doctor told us he knew we were above them in education and social status.

Before Van's birth, his mother and father signed away their rights. They had asked the doctor to find "it" a home. They never knew whether the baby was boy or girl as the mother never saw him after birth.

There was no reason in this world why they couldn't keep and support their child as he had an average paying job. The only reason is they did not want the responsibility of rearing him. This baby made three that he had delivered for this couple in past two years. He had found homes for all three. I do not know if Van has two brothers, two sisters, or a sister and brother. The doctor did not say and it did not matter to me as he was my baby for ever and ever.

You see the reason for Van's being of Cesarean birth. He was third and she didn't want to be bothered with any more children.

We had agreed to pay for Van's birth and felt we were committing no sin as we would have had to pay for his birth had he been born to me. However, we thought at the time it would be a natural birth. When we found it was not and that the price would be around $250.00, we said it could be possible that I might have had the same, as agreed with the doctor on $250.00.

When we went to get the baby and the office clerk began to total the bill, she passed $250.00 then $300.00 and was going on up. My husband said he agreed on $250.00 and they could keep the baby. We had known for one week he was ours and it was like he had just died. I left crying and running up and down the halls to find the doctor. I told him it was not our place to pay for her protection and thought they should pay for any balance over $250.00. He went and talked to the mother and she agreed to pay the rest. My hurt had left when I looked through the glass and I saw that little bit of heaven.

My first impression of baby, was that he was ugly--so small and wrinkled. His hair grew down low on his forehead. In fact, his dad said he looked like an over sized wood rat. The nurse loved him and said he was so sweet. This was our first time to see him and at that time we did not know if we would get him or not.

The doctor told us to come home and he would call us in 5 or 6 days and report on his condition. He said he didn't want us to take a child and it not be well. The next days and nights seemed like a year. Oh, for the phone to ring and say he was our baby. Finally, the doctor did call and say we could have him and pick him upon the week-end. The sewing took place--baby clothes and bassinett. Van's grandmother and a few of the neighbors helped.

We went to Dallas to get our baby boy. His grandmother went too. This time when we saw him we both thought him a pretty baby, because we knew he was our very own. The doctor told us he wasn't getting along as well as he would like to have him do, so he advised us to go back without him and have our Christmas vacation and pick him up after Christmas. We hated to come home without him, but knew it was for the best and that

was what we surely wanted. Did give me another week to sew and get things ready.

We got him on the 27th of December. The nurses all came to tell him goodbye and some even cried because they were happy he had a mom and pop to love him forever and give him the best home possible. He looked so sweet all dressed up, and it was wonderful to hold him in my arms. He was just a doll in more ways than one. He only weighed 4 lbs. 14 1/2 oz. when he checked out of the hospital.

The grandparents were at our house when we arrived. Also his great grandparents came to see him and five of the neighbors. During the next week 26 other people came to see him.

When Van was only 20 days old, we took him to the court house to get his adoption papers. He was so small that I carried him on a pillow and showed him off to everyone. The judge told us that an adopted child can never be left out of a will or be disinherited. The law is always on the side of an adopted child.

When Van was born at the hospital, his birth was recorded in Austin, Texas. He had to be named, of course. So when we got his adoption papers, we mailed them with the papers his mother and daddy had signed and his birth certificate now reads as though he were born to us. Van had red hair and blue eyes, so the Van is from Van Johnson, the movie star and Carroll for the carols at Christmas because we got him at the most wonderful time of the year.

The first month at home Van didn't seem to gain and didn't sleep very long at a time. We were up most every night, all night long. His grandmother would keep him one night a week and didn't close her eyes. We really got a good night when he was with his grandmother.

We decided when he was 38 days old to take him to Dr. Woodward in

Sherman. Told the story and took his report from the hospital. He weighed 6 lbs. and 4 3/4 oz. His formula that the hospital gave was not strong enough now and holes in the nipples were too small. When we arrived home, I fixed up the new formula and enlarged the holes in the nipple. Van drank all his milk and fell asleep and we did, too. He slept all night without waking. From that time on he continued to gain and to sleep well.

We took the baby back the next week and his weight was 8 lbs. 1 oz., almost 2 lbs. gained in one week.

The wrinkles filled out fast and he got as round as a ball--so sweet and pretty.

Chart of His Weight

Birth	6 lbs.
8 days	4 lbs.--1 oz.
16 days	4 lbs.--14 1/2 oz.
5 weeks	6 lbs.--4 1/2 oz.
6 weeks	8 lbs.--1 oz.
2 months	10 lbs.--14 oz.
4 months	15 lbs.--4 1/2 oz.
5 months	17 lbs.--5 oz.
6 months	19 lbs.--5 oz.
8 months	20 lbs.--14 1/2 oz.
10 months	24 lbs.--1/2 oz.
1 year	26 lbs.--10 oz.
15 months	28 lbs.--12 oz.

On December 14, 1 year and 2 days old, he quit the bottle on his own accord.

On March 15, 1948, he took a small pox shot. He had only a slight fever for one day.

He didn't learn to crawl until 10 months old and was about 8 months old when he first sat alone. He was late walking.

The doctor said he had flat feet and a rolling foot. But on specially made shoes with built-up sole on one side, he finally learned to walk. He was 18 months at the time.

We took Van back to Dallas to the hospital to show him off, when he was 3 months old. The doctor wasn't in but the nurses nearly had a fit. He weighed about 12 or 13 lbs. then. When he was 4 months old, we saw the doctor. Then again when he was 16 months old. He said I had done a wonderful job on him as he was a picture of health.

Van had all the shots that they give children. Just left it up to Dr. Woodward. Not like most children who cry and cry when they go to the doctor, Van never cried, not even when he was given shots.

He was very good natured and laughed when spoken to. Could wake him anytime in day or night and he awoke smiling. Never knew what it was to play rough or to hit anyone. Even left him in bed with his baby brother and wasn't afraid he would hurt him even when only a few weeks old. (Two years between their ages.)

Van was christened on January 11, 1948, just one month old. He has attended Sunday School and church since that time. We have been in 4 churches. Each time has taken sometime to get him used to it. He has never objected to going to Sunday School, but occasionally he resents church, says too long to sit still and not talk.

When only 2 years old, he was crazy about the Sunday School piano. Could hear it play from our home when the women would be having their meeting. His first song to sing was "What a Friend We Have in Jesus."

One day when only passed two years, I had spanked him and sat him on the back steps, he went from a cry into a song "What a Friend We Have in Jesus." That sent a pain through my heart and I wanted to go love him and tell him how much I did love him. I guess when one is adopted, the parent has both love and sympathy, and for their own born only love.

Van has always loved to sleep by himself and never with anyone. He has never liked to take naps. He is hard to get to bed at night, and

about as hard to get up in the mornings. Before he started to school I just let him sleep until he woke and wanted to get up. Many a time it would be 10 or 11 o'clock and a few times would even be noon.

Since he is in school now I try to get him in bed by 8 or not later than 8:30, then he has to be awakened by 7:30 in order to be on time at school. When he does stay up late, because of company or going some place, Van always has a bad disposition the next day.

Van has never had a loving nature. Even when only a few months old he didn't like anyone to love and kiss him as other babies do. Not at all like his brother, who comes to me a dozen times a day and wants to love my neck and give me a kiss. If you get any loving from Van, you have to ask for it. Then, he is very shy and a show of affection seems to embarrass him. When I sleep with him and want to love him up, he pulls away. Often times I look at him and say to myself "No wonder he doesn't have love. He was born into this world without love--not wanted--not caring whether he lived or died." Even though he doesn't care to be loved, his grandmother and I love him quite often--hoping to overcome his feelings on love.

Van wasn't quite 2 years old when his brother came. This child was born to us, and to this very day I don't believe we would have been blessed with him, had we not adopted Van. We did so want children and thought we could never have any. After getting Van, we were so thrilled and loved him so very much, we forgot our situation. We settled down with our family.

I'm sure we have spoiled him and caused him to have faults because of our loving him so much. His grandparents on my side were as happy as we were over him, and never missed a day seeing him no matter how bad the weather was.

Van was pleased at the time we had the baby and seemed to love and enjoy him until he was a year old. As I have said before Van was good natured when small and I didn't worry leaving Van in bed with his brother when I hung out clothes or had something to do outside the house. His brother had more vim and vitality than han had. He was born healthy and was loved from the moment God let us have him. He was the type of baby that picked and slapped at everything. Even carrying him in your arms, he would pick things off chests as you went by them. Slapped at anyone or had the awful habit of biting people, especially Van.

When he would bite Van, I've even tried to get Van to bite him back but he said, "No--it would hurt him." I've seen the skin break and bleed and prints of his brother's teeth on his little back several times. Then Don would slap, hit or throw anything at Van for no cause at all. I guess a person can just stand so much--so when Don was near 2 years and a half old, Van began to fight back. He had never hit and had never had a mean expression on his face before. But now it was there, as bad as could be. He would hit with all his might and look as though he could kill Don and wouldn't bother him in the least. Then he began to ask why I let the old stork leave Don. He wished he didn't have a mean brother and that he wished he were dead.

This attitude toward his brother has continued and doesn't seem to be any better. Van will give up to anyone else before he does to Don. I sometimes think he doesn't care one thing about Don.

Many a time when I won't take Van, Don will cry. When I want Van to come and get in the car, he just stays and does what he is doing. I can start the car and say, "I'll leave you then" and Don begins to cry. He never wants to leave Van, but Van would leave him anywhere.

Even when I buy candy and gum, Don always thinks of Van--but never

Van of Don. He would eat the last bit and never save any for Don unless he was made to. Van wants to have things first, the best, and biggest of everything. Never wants to share, and has to be made to give up. The opposite is true of his brother. Van can talk him out of anything if he goes about it in right way. But let him try to take it away by force, he has a fight on his hands.

Van loves nature in all its form. He has loved flowers ever since he could talk. Wants to put any and everything in a pot to watch it grow. Each year he has to have a garden and flower bed, and I let him do his planting, watering and working of the vegetables and flowers.

Another good point in Van's favor is taking all kinds of medicine. I've never had to force, whip, or bribe him to take medicine when I wanted him to. He learned to take pills and tablets without mashing them up at a very early age.

Van likes to be read to and to have stories told to him. His favorite story is about "Little Van," telling of going and picking him out of all the babies. He often times asks, "Why did you get me?" He has been told, "Because you were the smallest and sweetest one of all and we loved you most." He knows he is adopted, but I don't think he fully understands the meaning of the word.

One day when I had corrected him or punished him for doing something he shouldn't, he was very mad at me and said, "You just got me from the hospital to be mean to"—This made me burst into tears and I cried and cried. Several times since when he wants to hurt me he tells me the same things—or that I don't love him. I try very hard not to cry and to pay no attention to him. He soon stops when I don't object.

Several times Van has said he was going to leave because I wasn't good to him. So one day when he remarked that he was going to leave, I

encouraged it. I got a clean change of clothes and tied them in a tea towel and put them on a stick. I gave him a quarter and handed them to him. I told him when I got him, he had no clothing at all, but here was a change and he could ride the bus down town and decide where he wanted to go and live. That when night came and he had decided I wasn't mean to him and he loved his home, he could come back. I would always love him and wanted him with me. I couldn't push him out the door. He didn't cry, but surely looked surprised. Said he didn't want to go but wanted to stay with us. His brother cried and tried to keep me from making him leave.

When Van was nearly 4 I started him to the Episcopal Church Nursery and Kindergarten School. This school was operated by nuns prepared for this work. The school was in accordance with rules and standards of the city school. Had two classes of nursery, two of kindergarten, and one first grade. The children were put in groups according to ages. Van was put in second nursery class, but after one week he was moved to the upper kindergarden class.

The move was made for two reasons—first, Van is large for his age, and second, because of the way he acted and treated the children. He didn't want to go to school and each morning for 2 or 3 weeks I left him crying, and a nun holding him to keep him from running after me. Because he didn't want to go to school, he pushed, hit and slapped the other children. Therefore Sister Constance moved him in her class so she could keep him straight.

Van only attended the school for half a semester because we moved 15 miles across town. Had he gone the full year would have helped him a lot in his kindergarden year in public school.

He learned to color, cut, and paste real well even the first semester.

Did learn to get along with children some better. Up to this time he hadn't had anyone but his brother to play with and they didn't get along too well together.

School History

Van entered the first grade at the age of 6 years and 8 months. His mother came with him the first day. While she filled out the information card, he looked things over in the room. He did not look too happy and was a little shy when the teacher talked to him and asked him if he had had fun this summer. He just nodded his head yes. Before he left he saw a calendar picture with Dick and Jane's picture on it. Dick and Jane are the characters in our adopted series of first readers. Van went over to his mother and said, "I hope we don't have to read about Dick and Jane." We told him we would do a lot of things that he would like to do. He seemed to have formed a dislike for Dick and Jane in kindergarden.

The teacher spent several weeks helping the children adjust to her and to the group and in preparation for reading readiness.

When she gave the Readiness tests Van rated very high along with several others. These formed the first group. They were more mature physically, mentally and, all except Van, emotionally. The teacher hoped that he would be helped by the atmosphere of the group and that it would build up a better attitude in him. It did help. But he has adjusted slowly. He didn't want to cooperate or just didn't know how. He wanted to be first in everything. Mrs. Reynolds talked to the group about taking turns and how much fun we could have doing things together but as yet he still wants to do things his way only whether it pleases the group or not. He likes the boys and girls in his class and seems to want them to like him but doesn't realize that his technique is bad.

He especially likes a little girl in his group. He often resents her reading better than he but worked out a plan by himself to take care of that:--Van is very good in art. He draws houses every minute he can--calls them house plans. They are good, too. We praise his work and it pleases him. He told the girl friend the other day that he would help her learn to draw better if she would help him learn to read as well as she. She told me about it. I said I thought that was a very nice plan and that they would surely have fun helping each other. It did work well and is still working. He is doing better now in other ways. He seems to like to work with others in the group also. He has improved in his reading so much that he is able to help others in the room. His confidence in doing school work has increased greatly. He still sulls occasionally but he has increased his number of friends both boys and girls and seems much happier.

Van is larger than most of the other children in the room. His attention span is less and it is difficult for him to sit at his desk and work long at a time. He often gets up and walks about the room but has learned to do so without disturbing since the teacher permitted them to move around so long as they do not bother others working in the room. He sometimes stands at the bookshelves and reads and sometimes kneels by the worktable and draws, colors, or builds with building blocks. He seems to have a feeling of belonging in the group now and does not want to disturb.

On the playground he still wants to bat first in the ball game but doesn't get angry and quit playing if he doesn't get to bat like he did at the beginning.

They took achievement tests April 24. They used the Stanford Achievement--Form J. His battery average was 2.5. His median file rank was 85.

I believe a big part of his trouble stems from over anxious parents and some emotional conflicts caused by his little brother, parents, and grandparents—By this I mean that they love him so much and want him to conform so strictly to the standards which they have set for him, without adequate understanding of a child's normal behavior patterns at different levels of development, that they sometimes lack patience. They are comparing him with other children in his room—not realizing that every child is unique.

Van has a high I.Q. and if he is handled carefully and with love and patience he will overcome his difficulties, I feel sure.

I have enjoyed watching Van and working with his parents who cooperate to the highest degree.

I have gained a great deal from this course on child development and have looked at the behavior of pupils in a different light since having taken this course. I have been able to see that all behavior is caused and have tried to find the cause.

The case study of Van was written by Opal who wanted to be a first grade teacher. Mable was studying to be a sixth grade teacher and was observing the underprivileged children in a poor socio-economic district when she discovered Johnnie Mae. Each girl had a different attitude toward her subject. Opal adored Van and thought of him all the time. Mable disliked Johnnie Mae, but she acted as if it were her duty to save the child.

Case Study 2

Johnnie Mae was born on February 22, 1942. She is one of seven children. The two older children are married and do not live at home.

Johnnie Mae, at thirteen years of age, is the middle child of the five still at home. She has a brother eighteen years of age, a sister sixteen, a brother eleven and a brother six.

Johnnie Mae's father is a carpenter. Her mother is away from home a great deal of the time as she works in various homes in town. Their home is a four room modern house. Johnnie Mae says that she helps her mother in the home by washing dishes and cleaning house.

The girl's over all physical condition is good. She is of average height and weight for her age. There is no evidence that she has any hearing difficulty, defective vision, nor speech defect. She does not seem to fatigue easily. Her general health is apparently good. She is strong and active and likes best to play in the most active games on the school yard during the play periods.

Johnnie Mae comes to school in clean, starched, nicely ironed clothes. Her clothes are worn, sometimes to the point of being ragged, but always clean. Her hair shows need of care and perhaps more frequent washings.

Johnnie Mae is in the sixth grade. Some test results for her are as follows:

Otis Mental Ability . . . . . I.Q. 100
California Reading Test 4.7
Mental Age. . . . . 145 Months
Educational Age . . . . . 119 Months

Johnnie Mae was retained an extra year in the third grade. At present in her school work, Johnnie Mae is poorest in arithmetic. She does best in reading. She usually makes a grade of 100 in her spelling lessons. She likes geography very much and since she reads fairly well she does reasonably well in geography. In fact, on a recent test in geography she made the highest grade of all the pupils in the room.

Other than her preference for geography over other school subjects she apparently has no special interests in things pertaining to school. She shows no ability for such things as art or music. In special art projects, ceramic work, or posters, her attempts to produce anything are unsuccessful and clumsy. She does not like to participate in, and will not take part in class programs or plays. This might be due in part to her feeling that her clothes are not good enough, but not wholly, as she will not take part even though she knows costumes will be provided for her.

In her school work Johnnie Mae will take no initiative. She is careless in her work, lazy, and very dependent on others. She will not go ahead with work for herself but wants help on everything. When the teacher makes an assignment expecting the children to go ahead with the work, Johnnie Mae will not work on her own, but wants constant help and attention. She is somewhat inattentive. Also, she likes to get up and walk around the room to see what everyone else is doing rather than do her own work. It is often hard to keep her in her seat. She sometimes shows signs of nervousness in that she giggles a great deal for no apparent reason.

Johnnie Mae is accepted by her group, or perhaps a better word would be "tolerated" in the class room. She is not a leader in the room. She often sits in school and eyes the other girls who have attractive clothes and who have their hair fixed nicely.

On a sociogram no one in the sixth grade room listed Johnnie Mae as a friend. Johnnie Mae named two fifth grade girls as her best friends.

Early this year Johnnie Mae started running around with one of the brightest girls in the sixth grade class. Johnnie Mae sat just in front of Roberta in the classroom and persuaded her to do most of her school

work for her. On the way home from school one afternoon the two girls started "picking on" some smaller girls. The smaller girls came back to school crying and told that Johnnie Mae and Roberta were going to "whip" them for something they had done which the two older girls did not like. The principal and classroom teacher talked to the two older girls. Johnnie Mae admitted that everything the younger girls had said was true. She cried and promised not to do it again. Johnnie Mae always cries bitterly when she is scolded and says she will never do the same thing again, whether it is fighting or something else. The next day she is apt to repeat the misbehavior. The teachers kept Roberta after Johnnie Mae had left and talked to her about letting Johnnie Mae influence her. Since that time Roberta has had nothing to do with Johnnie Mae.

Outside of school Johnnie Mae associates with the younger girls. She likes to boss them and is the leader among them, but not the right kind of leader. After school she seldom goes home. As the mother is usually not at home, Johnnie Mae goes where ever she pleases. Very frequently she gets into fights with other girls, usually the younger ones. She starts the fights. She goes out of her way and in the opposite direction from her own home just to have a fight. These fights may develop from something she started at school or she may start them on the way home. Apparently she enjoys fighting. The mother whips her for fighting, at least so she and her mother have told the teacher. However, this does not seem to deter Johnnie Mae from getting into another fight the next day. At the present time she does not seem to be having as many fights as she did at the beginning of the year and does seem to be trying to behave better.

The child herself can not be blamed for this fighting, for fighting is all she knows. Her mother and father have frequent "knock down and

drag out" fights at home. Both parents drink, though the mother does not drink as much as she did two years ago when an older sister was in the sixth grade. At night the parents send the children to a movie and then go away somewhere. The children come home to find the house locked and just have to wait or roam the neighborhood until the parents arrive home, often intoxicated.

Johnnie Mae will come to school in the morning and then stay out in the afternoons. One day at noon her mother came to school hunting her. The mother said she had sent her to school that morning when she went to work, but Johnnie Mae did not ever get there that day. When questioned about this incident the next day Johnnie Mae said her mother had known all the time that she was not in school.

Several weeks ago Johnnie Mae and the two fifth grade girls whom she listed as her best friends stayed out of school. Again Johnnie Mae's mother had gone to work and supposed the child was in school. The three girls met at a neighborhood store and from there went to the K.O.&G. depot where they spent several hours, according to the report. About noon one of the fifth grade girls went to town. Johnnie Mae and the other fifth grade girl hid under the Bayou bridge until all the children had returned to school for the afternoon session. When they were found, one girl was whipped so severely that she was not able to come to school the next day. As far as could be ascertained Johnnie Mae was not punished at home for being truant from school.

Right after this episode Johnnie Mae's teacher showed her the results of her reading, language, and arithmetic tests. Johnnie Mae became quite concerned over the poor showing she had made on the tests. She asked if she were in school every day for the rest of the term if she

would be able to be promoted. The teacher told her that she would. There has been no more truancy since that time.

Last week Johnnie Mae stepped on a broken plate and cut her foot quite badly. Johnnie Mae was so upset at having to miss school because of this that she had her mother call the teacher to explain the cause of her absence. The mother told the teacher that Johnnie Mae did not want to be absent for fear she would not be promoted. Johnnie Mae was not able to come back to school all week. She had to miss the class picnic which was most unfortunate as she enjoys outings very much, and probably seldom has an opportunity to go on one.

Johnnie Mae has no money of her own such as an allowance, but says that her mother and daddy give her money if she wants it. She stated that she goes to the movie nearly every Saturday. Her favorite actor, she says, is Roy Rogers.

Her interest in geography shows up in her list of these desires: "I would like to visit all over the United States. I would like to visit Hollywood, California." She also says, "I would like to play a piano." She lists this, but still she takes advantage of none of the opportunities to be in any program, sing with the group or any such activities. Another desire she expressed was, "I would like to be the 'author' of a book."

She is not encouraged to read nor has she been read to at home. Her reading preferences are school books and funny books. She also said, "I like Marine 'magazines' and I like to look at murder 'magazines' and detective."

Knowing Johnnie Mae's environment and home life, it is not surprising to us that she behaves as she does. The teacher does much for her, but how can one teacher do a great deal for any one child in an

overcrowded room? How much can one person be expected to do for a child going home to a life such as Johnnie Mae's? At least knowing the child's background the teachers can understand her and some of her problems and give much sympathetic help.

Experiences With Children

One of the subjects with the highest mental rating on the A C E expressed her reaction to the course in child psychology in an article for the student publication, The Southeastern.

Although the students did not know that they were subjects of experimentation, the author of the article caught the essence of the course. The entire article is reproduced below.

THERE IS MORE THAN TEXTBOOK
LEARNING IN PSYCHOLOGY CLASS

> Parents of today's Southeastern students might be inclined to raise a proverbial eyebrow when their children relate to them tales of their psychology courses.
>
> Methods of teaching psychology, particularly in the field of child study, have taken such radical changes in the past few years that students of the "old school" may think the subject entirely different from the one they took.
>
> This summer Sally Leonard's class is taking full advantage of the modern methods of practical teaching by utilizing every opportunity to observe children in their own natural environment and thus learn the principles of child development. This is certainly a far cry from the strict book-study method of past years.

Bible Schools

> For two days last week the class, approximately 45 en masse, attended sessions of vacation Bible school held at the Fairview Baptist church. These informative visits also proved highly entertaining. They were so entertaining, in fact, that the observers had a difficult time remaining objective in their attitudes toward the "subjects."

Last Friday and Monday the class convened at Russell elementary school where they watched the intellectual behavior patterns of the eight fourth grade students of Elizabeth McKinney.

In spite of the fact that the group of college pupils outnumbered the fourth graders, the youngsters were remarkable unaffected, and a good time, both educationally and entertainingly, was had by all.

Miss Sally says that psychology 323 not only meets daily at 8 a.m., but also is in session any place and any time one of her students comes in contact with children.

---A.B.

The Southeastern, July 28, 1954, p. 2.

Provision For Experiences

Opportunity was furnished to permit subjects to observe all types of reactions and situations in order that the behavior of children might be understood and interpreted. A Christmas party with music and refreshments was given for the fourth, fifth, and sixth grades at Russell elementary school. There were committees named from the members of the psychology class and the subjects directed the music and helped with the entertainment of the guests. A member of the group wrote the article for the daily newspaper.

PSYCHOLOGY CLASS
ENTERTAINS RUSSELL
PUPILS AT PARTY

Miss Sally Leonard, associate professor of Psychology and Education at Southeastern State College, assisted by her students in the ten o'clock Child Psychology class entertained the pupils of the fourth, fifth and sixth grades at Russell on Wednesday with a Christmas party. The groups met in the ballroom of the student union.

Norvin Allen read a Norwegian Christmas story. "The Night Before Christmas" and "Christmas Carols" held the guests spellbound.

Dean Conrad accompanied the groups at the piano and led the singing.

The refreshment committee assisted in serving the treats of candy canes and Dixie cups.

Among the guests were Mrs. Johnnie Moore, Mrs. John Rodgers, and Mrs. Vesta Green, critic teachers. One hundred thirty-three students and pupils were present.

Durant Daily Democrat, December 19, 1954, p. 3.

VITA

Sallie M. Leonard
candidate for the degree of
Doctor of Education

Thesis: THE EFFECTS OF DIRECTED EXPERIENCES WITH CHILDREN UPON THE KNOWLEDGES AND UNDERSTANDINGS OF COLLEGE STUDENTS IN A COURSE IN CHILD PSYCHOLOGY

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The content and form have been checked and approved by the author and thesis adviser. The Graduate School Office assumes no responsibility for errors either in form or content. The copies are sent to the bindery just as they are approved by the author and faculty adviser.

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