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# Individualized instruction through team learning in a college course in general psychology

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INDIVIDUALIZED INSTRUCTION THROUGH TEAM LEARNING  
IN A COLLEGE COURSE IN GENERAL PSYCHOLOGY

Submitted by

Alfonso E. Gore

(B.S. in Ed., Bluefield State Teachers College, 1950)

(M.A., West Virginia University, 1952)

(C.A.G.S., Boston University, 1958)

In Partial Fulfillment of Requirements for  
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1962

First Reader: B. Alice Crossley  
B. Alice Crossley  
Professor of Education

Second Reader: Donald D. Durrell  
Donald D. Durrell  
Professor of Education

Third Reader: A. Cornelia Sheehan  
A. Cornelia Sheehan  
Assistant Professor of Education

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## CHAPTER I

### INTRODUCTION

#### Statement of the Problem and Justification

One of the greatest discrepancies in education lies in the realm of classroom instruction. This is true not only in our elementary and secondary schools, but it is also very true at the level of higher education. Colleges fail, in many instances, to recognize the psychology of individual differences and perform under the delusion that all students are at the same mental level. This should not be true.

In an effort to recognize the psychology of individual differences and implement the same, the writer has attempted to adjust an elementary school method to college teaching of general psychology, namely, the method of team learning. Credit for the method itself does not belong to the writer, but should go to Dr. Donald D. Durrell, Professor of Education, Boston University, who experimented with the method of team learning in the Dedham Public School System, Dedham, Massachusetts.

#### Purpose of the Study

The purpose of this study is threefold: first, to see if effective provisions for the learning needs of college students can be made through the method of team learning; second, to see if the achievement of those students participating in team learning will differ significantly from the achievement of those students in classes where the lecture method

is being employed; and third, to discover whether students will differ significantly, with reference to retention, one school quarter after participating in team learning, from those students participating in lecture classes.

### Justification of the Problem

Since the greatest discrepancy in education lies in the realm of classroom instruction, every effort should be employed to extirpate this discrepancy. This effort should not be confined to the elementary and secondary schools.

The consensus of studies made since 1920 is that no one teaching method at the level of higher education, in and of itself, is better than another.<sup>1</sup> However, to the writer's knowledge, the idea of team learning has not been employed at the level of higher education.

Through the idea of team learning, a new approach to classroom instruction will be introduced at the level of higher education, and the implementation of the psychology of individual differences will become a reality.

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<sup>1</sup>Winslow R. Hatch, "Effectiveness in Teaching," New Dimensions in Higher Education, Bulletin, 1960, Number 2 (Washington, D. C.: United States Office of Education), p. 10.

## CHAPTER II

### REVIEW OF LITERATURE

#### Introduction

The idea of designing instruction for the individual student is not new. It can be traced to early Egyptian civilization. The Hebrews recognized the value of individualized instruction when they wrote into the rules of Talmud that each child was to receive maximum instruction according to his ability. The Greeks showed great concern for the development of the individual's mental ability.

It was not until the middle of the seventeenth century that western civilization recognized the worth of individualized instruction. This recognition grew out of the realization that the strength of democracy lay in an educated citizenry.

#### Early Colonial Instruction

All instruction in America, before the eighteenth century, was individualized. Cubberley<sup>1</sup> not only describes colonial instruction, but criticizes it in the same paragraph:

The greatest waste of time came from the individual methods of instruction universally followed in teaching. Children came forward to the teacher's desk and recited individually to master or dame, and so wasteful was the process that children might attend school for years and get only a mere start in reading and writing.

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<sup>1</sup>Ellwood P. Cubberley, Public Education in the United States (Boston: Houghton Mifflin Company, 1919), pp. 36-37.

During the eighteenth century, group instruction and the graded school idea came into being. However, this deviation from individualized instruction was confined to the larger cities.<sup>1</sup>

### The Graded School Idea

The graded school idea deviates more from the psychology of individual differences than any other concept in education. The very nature of the organizational structure of the graded school idea assumes that all children are at the same level in all areas of growth and development. This assumption cannot be true, based on what we have learned from educational psychology.

As a basic system of organization, the graded school idea took its form in the United States during the middle of the nineteenth century. Meyer<sup>2</sup> makes the following observation:

Classifying pupils in accordance with their years and their scholastic accomplishments, and arranging them in grades, each with its own master, had become familiar enough in the cities by the forties.

The opening of the Grammar School in Quincy, Massachusetts, in 1848, is often thought of as the first true graded school in the United States. Philbrick<sup>3</sup> describes this school when he says:

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<sup>1</sup>Warren W. Coxs, "Grouping Pupils for Purposes of Instruction," Nation's Schools (May, 1929), 3:47-54.

<sup>2</sup>Adolphe E. Meyer, An Educational History of the American People (New York: McGraw-Hill Book Company, 1957), p. 126.

<sup>3</sup>John D. Philbrick, City School Systems in the United States (Washington, D. C.: United States Government Printing Office, 1885), p. 158.

The essential features consisted, first, in giving a separate room to each teacher; second, in grouping a sufficient number of these rooms in the same building to accommodate pupils enough for a good classification; third, in the provision of an assembly hall spacious to seat all the pupils accommodated in the building.

The irony of the graded school idea rests in the fact that educators and curriculum builders have become subservient to it rather than the reverse. This is obvious, because it is difficult to find a school system in these United States that is not graded.

From its very beginning, the weaknesses of the graded school idea have been overlooked. Dean<sup>1</sup> writes, "It seemed to remedy so many of the inadequacies of the older individual system that it became firmly entrenched, and its weaknesses were overlooked." Generally speaking, the above statement is true. However, by the beginning of the 1900's there had been some inspired attempts to find ways of improving the graded school idea. References in the literature to the Pueblo Plan, the Cambridge Plan, the Elizabeth Plan, and others give evidence of these efforts.<sup>2</sup>

#### Past Attempts to Individualize Instruction

As a result of dissatisfaction, and with the recognition of the psychology of individual differences, Preston W. Search, Frederic L. Burk, Carleton W. Washburne, Helen Parkhurst, and many others made

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<sup>1</sup>Ray B. Dean, "Individualized Instruction in the Elementary and Secondary Schools of the United States; 1888-1940" (unpublished Doctoral dissertation, Leland Stanford Junior University, 1943), p. 2.

<sup>2</sup>G. Wesley Sowards, The Changing Curriculum and the Elementary Teacher (San Francisco: Wadsworth Publishing Company, 1961), p. 181.

sincere efforts to correct and improve the graded school idea. Out of their efforts grew some of the widely known plans presented in the following section.

### THE PUEBLO PLAN

The Pueblo Plan was initiated by Preston W. Search in 1888 in Pueblo, Colorado. It is not known where Search got the idea for the Pueblo Plan; however, his own education may have influenced his thinking more than anything else. Dean<sup>1</sup> writes:

Then there was his own early educational experience in the Marion High School, as a special student under the direction of the superintendent. This opportunity to work individually, in advance of the regular classes, must have impressed him with the advantages of individual instruction.

An analysis of Search's<sup>2</sup> philosophy may also shed some light into why the Pueblo Plan was initiated:

The bright, capable pupil has been retarded in his progress, has spent time in lifeless reviews and valueless repetitions of lessons and has had his ambition stunted, while the slow-going pupil, who often fruits best in later life, has been hurried forward at an unnatural pace, plunged prematurely into difficulties he does not understand, to flounder, to repeat grades, and to be discouraged, when education should have been to him just opportunity proportionate to his working ability.

Not only does Search's philosophy give insight into the why of the plan, but it shows that he recognized the psychology of individual differences.

The new plan had its beginning in the high school, and later it

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<sup>1</sup>Dean, op. cit., p. 36.

<sup>2</sup>Preston W. Search, An Ideal School or Looking Forward (New York: D. Appleton and Company, 1901), pp. 4-5.

moved into the lower grades. Search<sup>1</sup> speaks of the new high school plan in the following manner:

In this school there was unlimited opportunity for individual advancement. There were no time requirements; the pupil could complete the high school course in his own time. He could take the usual number of studies, or more, or less, and if necessary, only one. There was no advance assignment of lessons; but the work accomplished was far greater than that ordinarily done. The teacher was the child's helper, and the discoveries of the pupils added much to the happiness of the teacher. The school was a miniature community, self-governing, self-reliant, and happy, because its individual members were also self-governing, self-reliant, and happy.

A more detailed description of the Pueblo Plan is given by Search<sup>2</sup> in the following statement:

The Pueblo Plan of Individual Instruction was largely a tutoring plan, with each teacher asking individual assignments and helping each pupil individually. There was no 'system' composed of individual instruction materials, assignment booklets, self-corrective exercises, and unit tests.

The plan was simply for each teacher to assist each of her pupils to progress through his studies as thoroughly, as rapidly, as healthfully, and as happily as possible. The individual needs of each pupil were considered paramount to uniformity in school or class organization. Teachers were to extend hope and encouragement to all pupils in need of it.

During the first year, the plan presented many problems. However, Search<sup>3</sup> speaks of this first year in the following words:

At first there was, with many, the feeling of helplessness that comes even to the older person when suddenly cut loose from the strong hand that has carried him; but, with all text advancement subordinated to the prerequisite there soon came surprising results in individual and unaided power to do work, and the school became a self-operating body whose central unit was the individual working in harmony with his fellows.

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<sup>1</sup>Search, op. cit., p. 251.

<sup>2</sup>Ibid., pp. 39-40.

<sup>3</sup>Ibid., pp. 248-249.

With reference to classroom climate, Search<sup>1</sup> observes:

The exuberant spirit, which before had bubbled over in countless tricks and escapades, now spent itself in the doing of work which completely occupied every individual worker by opportunity of continuous advance at every step of the way. The instructor, cuddling his pupils and adroitly used by them in the doing of their work, had disappeared; while in his stead there came a school of intensely busy workers, each proud of his growing strength and conscious independent advancement.

Search<sup>2</sup> felt that his individualized approach to instruction had many advantages over the graded or "lock-step" approach, and said so in the following statement:

The ungraded schools have always had much individual opportunity. The teacher has been unable to help the pupils very much, and hence the pupils have learned to help themselves. Each pupil has advanced pretty much as fast as he could, so that the country boys coming to the city schools must, to the chagrin of the city superintendent, usually be placed in higher classes than the city pupils of the same age who have been so comfortably cuddled under the graded system.

Educators from many parts of the country came to Pueblo to study the plan, and it received great praise from many of them. Washburne<sup>3</sup> not only had high praise for the plan, but paid Search a great personal tribute in the following words:

Search was ahead of his times. Textbooks were not so written as to make self-instruction possible; people were not convinced that any such radical departure was necessary--we had no intelligence tests or achievement tests in those days. The tremendous amount of work Search inspired his teachers to do in order to make individual progress of pupils possible, continued only as long as Search's dynamic personality aroused the necessary enthusiasm.

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<sup>1</sup>Search, op. cit., pp. 248-249.

<sup>2</sup>Ibid., p. 259.

<sup>3</sup>Carleton W. Washburne, "The Inception of the Winnetka Technique," American Association of University Women Journal (April, 1930), 23:129-134.

After Search left Pueblo, his individualized instruction plan was replaced by whole class teaching. This may have been due to the loss of Search's great dynamic personality.

#### THE SAN FRANCISCO STATE NORMAL SCHOOL PLAN

When Frederic L. Burk became president of San Francisco State Normal School in 1899, he made many criticisms of the whole class approach to instruction. These criticisms grew out of Burk's awareness of the psychology of individual differences.

Burk was not satisfied with being a critic, but he made an earnest effort to solve the problem. He reorganized the teacher training program at San Francisco State Normal School completely. McHugh<sup>1</sup> makes the following observation:

Under his direction, the teacher training program was reorganized to provide a practical training period in addition to the study of theoretical aspects of education. The Elementary Training School was organized so that twenty-five children were taught by a student for a period of twelve weeks. At the end of each twelve-week period, the student teachers were rotated to other groups of children.

The children were grouped according to ability. Realizing that a range existed in each group of children, Burk further divided them into smaller groups.

He soon became dissatisfied with the ability grouping and moved in the direction of individualized instruction. Miss Mary Ward not only served as a motivating force for Dr. Burk, but, as he moved in the di-

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<sup>1</sup>Walter J. McHugh, "Pupil Team Learning in Skills Subjects in Intermediate Grades" (unpublished Doctoral dissertation, Boston University, 1960), p. 9.

rection of individualized instruction, she played a great part in the design of his individualized program.

The program seemed to center around the idea of self-instruction on the part of the children. The plan made use of self-instruction bulletins and booklets. Dean<sup>1</sup> gives the goals of these instructional materials as follows:

To construct a text complete enough to make possible individual progress through the use of materials and references.

To use language simple and clear enough to be understood by the slowest pupil, without assistance from the teacher.

To eliminate abstract explanations and the necessity of learning rules and definitions.

To present new materials through carefully graded steps of activity on the pupil's part.

To introduce but one difficulty at a time.

To provide sufficient drill material to enable even the slowest pupils to master the facts or principles presented.

To provide drill material in accordance with the needs of individual pupils.

To produce systematic diagnostic reviews to cover all work previously mastered.

To include pupil-tests at the close of each unit taught.

To provide answers to all exercises so that pupils might correct their own work.

Allowing the children to move at their own rate resulted in the necessity for many adjustments. Dean<sup>2</sup> writes of these adjustments in the following manner:

If a pupil tended to run ahead in certain subjects and behind in others, the matter was adjusted by changing the daily time allotments for the one pupil in a way to secure evenness of progress insofar as this seemed necessary or desirable. About one-third of the pupils were 'self-reliant pupils' and were accorded the privilege of deciding for themselves the amount of school time which should be given to each subject on their progress.

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<sup>1</sup>Dean, op. cit., pp. 100-101.

<sup>2</sup>Ibid., pp. 106-107.

The faculty of San Francisco State Teachers College described the plan in the following observation:<sup>1</sup>

In 1913, with the cooperation and leadership of the late Dr. Frederic L. Burk, the faculty of the training school department of the San Francisco State Teachers College organized all classes from the kindergarten through the eighth grade so that every pupil had the opportunity of progressing in each school subject as rapidly as his individual ability permitted.

Each of the 700 children enrolled was given a copy of the course of study for each subject of his program of studies. Provision was made for testing and promoting pupils as soon as the work outlined for any grade in any subject was completed. Class recitations were abandoned. No daily assignment was given in any subject.

The decline of Dr. Burk's plan began with a ruling by the Attorney General of California against the distribution of self-study materials by the state school.<sup>2</sup> Dean<sup>3</sup> attributes the decline of the plan to many causes, chief among which was the death of Dr. Burk. He states:

Many other factors, such as changing conditions brought on by the war in 1918, rapid turn-over in faculty membership, and the failing health of Dr. Burk resulted in a decline in the practice of individual instruction. In 1924, the death of Dr. Burk practically brought to a close the era of the individual instruction system at the San Francisco State Normal School.

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<sup>1</sup>Mary A. Ward, et al., "Individual System as Developed in the San Francisco State Teachers College," Adapting the School to Individual Differences, Twenty-fourth Yearbook of the National Society for the Study of Education, Part II (Bloomington, Illinois: Public School Publishing Company, 1925), p. 60.

<sup>2</sup>McHugh, op. cit., p. 13.

<sup>3</sup>Dean, op. cit., p. 136.

## THE WINNETKA PLAN

The Winnetka Plan had its beginning in 1919 with the coming of Dr. Carleton W. Washburne to Winnetka, Illinois, as superintendent of schools. This is true only in the sense that it gives us a point of departure for the plan itself. It must be kept in mind that Washburne had been a colleague of Burk and Mary Ward at San Francisco State Teachers College, and was firmly oriented in the ideas of individualized instruction. In truth, it was on Burk's recommendation that Washburne went to Winnetka.

The philosophy supporting the Winnetka plan was given by Washburne<sup>1</sup> himself:

Every child has a right to master those knowledges and skills which he will probably use in life; every child has the right to live naturally, happily, and fully as a child; human progress depends on the development of each individual to his full capacity; and the welfare of human society requires the development of a vital social consciousness in each individual.

The implementation of the Winnetka philosophy is expressed in the following goals by Doggett and Petersen:<sup>2</sup>

The objectives of the Winnetka Plan are: (1) to obtain a clear definition of the essentials of the fundamental subjects in terms of units; (2) to encourage instruction and correction through the use of practice materials; (3) to diagnose pupils' activity; (4) to promote by subjects with grouping of the pupils on a social and an age basis, rather than on an intellectual or achievement basis; and (5) to have much group and creative activity daily, these activities being chosen by the individual pupil and not by his advisers.

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<sup>1</sup>Carleton W. Washburne, "Winnetka," School and Society (January, 1929), 29:37-50.

<sup>2</sup>Clay J. Doggett and Florence A. Petersen, "A Survey of Popular Plans of Instruction," Educational Administration and Supervision (October, 1932), 18:499-522.

Organization and promotion were very important phases of the Winnetka program. Washburne<sup>1</sup> writes of organization and promotion:

About half the morning and half the afternoon are consumed by the individual mastery of the knowledge and skill subjects. In these, promotion from grade to grade is individual, continuous and by subjects. The room in which a child sits is determined by his social age.

Washburne believed strongly in the mastery of skill subjects. McHugh<sup>2</sup> writes:

In skills subjects Washburne endeavored to emphasize complete mastery. He contends that the first step in initiating individual instruction is to determine specifically what the child is to learn. Secondly, he stresses the wide and frequent use of diagnostic tests.

At the outset, the staff at Winnetka used the materials for individualized instruction developed at San Francisco State Teachers College. These materials were soon changed as a result of research, curriculum revision, and need. Washburne<sup>3</sup> states the importance of these materials as follows:

The materials have to be at hand for the individual work, especially in arithmetic. Modern textbooks and workbooks often can supply this material, if the non-functional and the unnecessary parts are omitted. Provision for self-correction of daily work is good for the child and saves the teacher unnecessary labor. Diagnostic tests at frequent intervals can give some indication as to whether or not real learning is taking place.

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<sup>1</sup>Washburne, "Winnetka," op. cit., pp. 48-49.

<sup>2</sup>McHugh, op. cit., p. 18.

<sup>3</sup>Carleton W. Washburne, "Adjusting the Program to the Child," Educational Leadership (December, 1953), 11:138-147.

Washburne<sup>1</sup> had a strong feeling for group and creative activities. Of this he states:

The group and creative activities are vital, life-giving parts of the curriculum. They are the real education. Giving the children a mastery of the three R's is important, but it is mere training. Education involves drawing out the child himself. It is for this purpose that the group and creative activities exist.

### Evaluation of the Winnetka Plan

Many attempts were made to evaluate the program at Winnetka. These attempts at evaluation ranged from the cost of the plan to achievement. With reference to cost, Washburne<sup>2</sup> said:

There is no reason for individual instruction to cost more than class instruction. There is no evidence that it does. And in the two places where costs have been carefully studied, no increase due to individual instruction has been found.

A comparative study was conducted in 1927 by the Progressive Education Association. They found that the children from the Winnetka schools were slightly superior in achievement to children from other villages at the end of grade eight.

High school freshmen from the several towns were compared with high school freshmen from the Winnetka schools in such areas as self-reliance, dependability, initiative, and school loyalty. Clerk<sup>3</sup> makes

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<sup>1</sup>Carleton W. Washburne, Adjusting the School to the Child (New York: World Book Company, 1932), p. 8.

<sup>2</sup>Washburne, "Does Individual Instruction Cost More Than Class Instruction?" Adapting the School to Individual Differences, op. cit., p. 205.

<sup>3</sup>Frederick Edson Clerk, "A Study of New Trior High School Freshmen, Including Pupils Who Have Come from Winnetka Schools," Adapting the School to Individual Differences, op. cit., p. 210.

this report:

The first of the studies conducted in this connection was made in an attempt to determine whether or not Winnetka children differed any from other children of the township in the high-school freshman class in such matters as self-reliance, dependableness, initiative, school loyalty, honesty, and ambition.

It appears that there is no appreciable difference between Winnetka students and the others as far as this effort to find the differences, if any, is concerned.

A second study was conducted to investigate the scholarship of these students. Clerk<sup>1</sup> makes the following observation:

While there does not appear to be any significant difference between Winnetka pupils and the others as far as scholarship in certain branches is concerned, it does appear from this investigation that the children from Winnetka have, on the whole, a better average scholarship rating than the children from the remainder of the township. Just how much this superiority in scholarship is due to the training the Winnetka children have received is a matter of speculation.

To answer the question, "Is Individual Instruction more, or is it less effective than class instruction in teaching school subjects?" Mackinder, Courtis, and Washburne<sup>2</sup> all concur that individual instruction tends to increase efficiency in the tool subjects.

#### THE DALTON LABORATORY PLAN

The Dalton Plan was conceived by Helen Parkhurst and was established by Crane at the Berkshire Cripple School. Because of its success,

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<sup>1</sup>Clerk, op. cit., p. 212.

<sup>2</sup>Jessie Mackinder, Stuart A. Courtis, and Carleton W. Washburne, "Is Individual Instruction More or Is It Less Effective Than Class Instruction in Teaching School Subjects?" Adapting the School to Individual Differences, op. cit., pp. 187-200.

Crane promoted the idea for the high school of her home town of Dalton, Massachusetts, in 1920.

Although the Dalton Plan originated in the United States, its popularity and wide acceptance were felt more in other countries than in the United States. According to Dean:<sup>1</sup>

By 1925 the Dalton Plan was in operation in England, Holland, Russia, Norway, Germany, Poland, Austria, Spain, Japan, China and India. It was the most widely known form of individual instruction of the time, surpassing the Winnetka Plan which was inaugurated a few months prior to the inception of the laboratory plan in the Dalton High School.

Kilpatrick<sup>2</sup> also recognized the popularity of the Dalton Plan in other countries. He writes:

Then came the Dalton Plan as something new, requiring a minimum of theory adjustment and allowing a maximum of appeal to two deeply rooted British beliefs--first, in individual initiative, and second, in schoolroom education as a preparation for written examinations.

In discussing the philosophy and instructional features of the Dalton Plan, Dean<sup>3</sup> states:

The Dalton Laboratory Plan of school organization was not primarily an individual instruction plan. It was designed, in the main, to give pupils a great deal of freedom, and to allow them to live and carry on their work in much the same manner as society does in a normal democratic community. Individual instruction developed as a natural outgrowth of this endeavor.

The major individual instruction features of the Dalton Laboratory Plan may be summarized as follows:

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<sup>1</sup>Dean, op. cit., p. 145.

<sup>2</sup>William H. Kilpatrick, "An Effort at Appraisal," Adapting the Schools to Individual Differences, op. cit., p. 276.

<sup>3</sup>Dean, op. cit., p. 175.

1. Each pupil was free to progress at his own individual rate through the monthly job or assignment given him.
2. In some Dalton Laboratory schools pupils were free to progress from job to job, and from grade to grade on through the school course at their individual rate.
3. During laboratory periods, and in the organization and conference periods, pupils were given individual instruction and assistance in organizing and accomplishing their jobs.
4. Although the jobs were assigned on a class-grade basis, the maximum and minimum requirements in some schools, and the modification of the general class assignment in individual cases, tended to modify the curriculum to fit the needs of the individual pupils.

Parkhurst intended that the plan be initiated in grade four and continued through grade eight. With reference to this point, Dewey<sup>1</sup> writes:

The reorganization plan worked out by Miss Parkhurst is adapted to eight grades, beginning with the fourth grade or its equivalent. Children would begin to work under the plan when they have finished the first three years of school and would continue working under it until they enter a college or university. Since it makes no demand on the curriculum, it can be used for schools divided into intermediate grades, and junior and senior secondary departments or to schools with a four-year secondary course.

The plan preserves grades for convenience in handling the children, but instead of classrooms and one seat for each pupil there are subject laboratories. One or more rooms are assigned for each subject that is taught in the school. Instead of keeping the teacher a 'jack of all trades,' each becomes a specialist in charge of one of these laboratories. In the youngest grades, where there are not now subject teachers, the grade teachers can be assigned to subjects on the basis of their interests and special aptitudes.

Little data is available on the outcomes of the Dalton Laboratory Plan. It received its greatest recognition in the high schools.

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<sup>1</sup>Evelyn Dewey, The Dalton Laboratory Plan (New York: Dutton and Company, 1922), pp. 8-9.

The plan was known around the world, and its popularity was phenomenal. However, this popularity declined as rapidly as it came into being.

#### OTHER PLANS OF INDIVIDUALIZED INSTRUCTION

In addition to the four outstanding plans discussed above, many other plans of individualized instruction are worthy of note. It might be said that some of these plans got into the literature, and some of them did not get into the literature.

##### Batavia Plan

The Batavia Plan was initiated shortly after the Civil War by John Kennedy, superintendent of schools in Batavia, New York. The plan was known as "coaching the laggards." Washburne,<sup>1</sup> in commenting on the plan, makes the following observation:

These children could not keep pace with the rest of the class--they lagged behind, became discipline problems, clogged classes by repeating grades and were stigmatized as failures. To help these children, John Kennedy, for many years superintendent of schools in Batavia, New York, developed a form of individual instruction about three decades ago. Essentially, his plan was a method of coaching and encouraging the laggards; of keeping them up with the rest of the class. An extra teacher was usually assigned to this duty, in each room, the regular class teacher being able, in consequence, to handle large classes.

##### St. Louis Plan

The St. Louis Plan came into being during the years 1871-1872.

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<sup>1</sup>Carleton W. Washburne, "Adjusting to Individual Differences While Retaining the Organization and the Method of the Class System," Adapting the Schools to Individual Instruction, op. cit., p. 32.

Doggett and Petersen<sup>1</sup> write of the plan in the following manner:

In 1871-72, the St. Louis Plan divided the school year into quarters of ten weeks each, making possible promotion of a given student four times within the period of forty weeks, while his less successful school mates need not repeat more than one such quarter of work unless horribly misplaced and inferior.

### Cambridge Plan

The Cambridge Plan provided for individual differences by allowing children to move at their own mental rate. However, no provisions were made for individual differences with reference to instructional materials. No data can be found in the literature to indicate the results of the plan. Santayana<sup>2</sup> speaks of the plan as still being in the experimental stage. He writes:

Various systems of flexible grading are still in the experimental stage. The Cambridge Plan groups all children into slow-moving, regular, and fast-moving. Each set goes over the same material, but at different speeds.

### Detroit Plan

Many new classroom techniques were started and evaluated in Detroit between the years 1914 and 1923. Courtis<sup>3</sup> experimented with ability grouping and later with individualized instruction within the ability groupings. He also reports the following results of studies

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<sup>1</sup>Doggett and Petersen, op. cit., p. 515.

<sup>2</sup>S. George Santayana, "The Intellectually Gifted Child," Clearing House (January, 1947), 21:259-267.

<sup>3</sup>Stuart A. Courtis, "Nature of the Investigations at Detroit and Some Conclusions," Adapting the Schools to Individual Instruction, op. cit., pp. 135-138.

selected from those done in Detroit:

The studies selected as typical of the lines of investigation pursued in Detroit lead to the following conclusions:

1. Even in the very first grades, where the situation is less complex than in the higher grades, in reading, the X-Y-Z plan of ability grouping does not eliminate enormous variation in individual achievement and progress, nor prevent extreme overlapping from group to group, or grade to grade.
2. Even within groups selected by group mental tests as of equal mental capacity, there is a very wide range in individual rates of progress as soon as opportunity for them is provided.
3. Practical administration of individualized lessons in handwriting in Grades 3B-4A on a large scale results in very similar range of rates of progress in all groups and grades.
4. Individualization of instruction saves time for the able by limiting drill to just the amount necessary to achieve standards, and for the handicapped by enabling them to master thoroughly each item before passing to the next.
5. Individualization of instruction improves efficiency through increasing the number of children who profit by instruction and decreasing the number who fail to gain and the number who are affected adversely.
6. The net result of the benefit of individualization of instruction is to increase the actual average efficiency of achievement of the group as a whole.
7. The increase in efficiency of teaching in the case of first-grade reading may result in a first semester class having an achievement higher than that of the regular third-semester class. In other words, there are possibilities of very great improvement in the efficiency of mass instruction.
8. The benefits of individualized instruction are not restricted to a particular subject. The general principles may be applied in all fields, and measurement of each new application that is made confirms the conclusions reached in other fields.

There were numerous plans based on some form of ability grouping. They were referred to as "multi-track," "X-Y-Z system," and "three-level grouping." The most outstanding of these plans was the Gary, Indiana, plan. In Gary, the plan was known as the "Time Distribution Plan." An

interesting feature of the Gary Plan is the fact that sessions were held on Saturdays to help children remain with their class groups.

#### THE PSYCHOLOGY OF INDIVIDUAL DIFFERENCES AND ITS RECOGNITION

Since 1918, leading educators in the United States have become more and more aware of the psychology of individual differences in education. Lawson<sup>1</sup> speaks of this increase in awareness:

A tabulation of all the statements dealing with the aims of changes in the curriculum showed that prior to the Civil War, only about six per cent of the statements dealt with the problem of meeting individual needs. But during the twenty-five years prior to 1936, the percentage was about thirty-six.

Durrell,<sup>2</sup> in 1936, recognized the importance of the psychology of individual differences when he asserted that "probably the greatest contribution of modern psychology to education is the recognition and measurement of individual differences."

Billett<sup>3</sup> not only recognized the psychology of individual differences, but he implies a degree of criticism of educators for not implementing it in the schools. He writes:

Facts and theories concerning individual differences which have filled library shelves to overflowing during the quarter of a century now elapsed since Binet's early experiments indicating that mental ability could be measured, are still reposing

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<sup>1</sup>Douglas E. Lawson, "The Growth of Individualization," Journal of Education (November, 1939), 122:266-268.

<sup>2</sup>Donald D. Durrell, "Individual Differences and Language Learning Objectives," Childhood Education (January, 1936), 12:149-151.

<sup>3</sup>Roy O. Billett, "What the High Schools Are Doing for the Individual," Bulletin of the Department of Secondary School Principals (March, 1932), 40:139-168.

on library shelves, or echoing through the lecture halls of schools of education, much more generally than they are incorporated into the practice of secondary schools. No fact has been established more thoroughly by this study than the fact that comparatively few schools are making thorough provision for individual differences.

Cook<sup>1</sup> recognizes and writes of these differences among children:

When a random group of six-year-olds enter the first grade, two per cent of them will be below the average four-year-olds in general mental development and two per cent will be above the average eight-year-olds. Disregarding the extreme two per cent at either end, there is a four-year range in general intelligence. By the time this group has reached the age of twelve (sixth-grade level) the range will have increased to almost eight years.

Not only does Sutherland<sup>2</sup> recognize the psychology of individual differences, but he contends that educators have failed the democratic way of life by regimenting children. He writes:

Schools heretofore have, to a large extent, ignored these differences, in an attempt to get simple, uniform organization, courses of study, and textbooks. The schools have therefore failed to exert the influence that they should toward developing good citizenship.

#### INDIVIDUALIZED INSTRUCTION THROUGH TEAM LEARNING

The term "team learning" is new, and it embodies many older methods and techniques. McHugh<sup>3</sup> describes team learning as follows:

First, it allows children to work in small groups--pairs or three's, depending on the nature of the task at hand. Secondly, it allows for the maximum amount of differentiated

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<sup>1</sup>Walter W. Cook, "Individual Differences and Curriculum Practice," Journal of Educational Psychology (March, 1948), 39:141-148.

<sup>2</sup>A. A. Sutherland, "Factors Causing Maladjustment of Schools to Individuals," Adapting the Schools to Individual Differences (March, 1932), 40:139-168.

<sup>3</sup>McHugh, op. cit., p. 47.

instruction, according to the progress rate and level of ability of each pupil.

With reference to the importance of differentiated instruction, McHugh<sup>1</sup> writes:

The role of differentiated instruction through the grouping of pupils into teams of two's and three's in the classroom is extremely important. Since children learn at different rates and under varying conditions, their patterns of learning will be individual. Many will require individualized teaching, while others will be able to proceed at varying levels of independence.

McHugh<sup>2</sup> contends that "situations will arise in which individuals will work alone; others in which pairs or small groups will prove most satisfactory." McDade<sup>3</sup> speaks of the social value of individual and small group work. He states:

The small-group situation is social, for the pupil is actively dealing with personalities, ideas, and things. In individual work the social element is absent, and he learns to deal with ideas and things consecutively and independently. Each of these two 'active pupil' techniques has inestimable value for education.

Small group work seems to provide for better interaction. It gives children an opportunity to share ideas, and in the process of sharing ideas they learn to respect the ideas of others. It also provides the teacher with an opportunity to come closer to the discrepancies that exist in each child.

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<sup>1</sup>McHugh, op. cit., p. 47.

<sup>2</sup>Ibid.

<sup>3</sup>James E. McDade, "Individual Learning in an Integrated School Program," Chicago Schools Journal (January-June, 1933), 15:61-62.

Durrell<sup>1</sup> contends that "there are a great many situations where interest is heightened, comprehension is increased, and general achievement improved through pupils working in pairs or in teams of three's."

With reference to the advantages of paired or team learning, Durrell and Palos<sup>2</sup> write:

Team study seems to offer many advantages to learning, especially in view of the wide differences in ability among pupils in any classroom. It permits adjustment to individual differences in level and training rates; rapid learners may advance faster or use more difficult material; slow learners may use easier material or more detailed study guides and progress at a suitable pace.

Durrell<sup>3</sup> continues to speak of the advantages of team learning.

He writes:

Studying a lesson is often a lonesome and insecure task for a child. Both the insecurity and lonesomeness may be removed by the use of graded study guides with the pupils working in study teams of two or more. Teachers who have been using a single textbook with silent individual study, following either by pupils' answers to oral questions or by pupils' written answers to questions on the board, will find a marked improvement in pupil interest and achievement when study teams replace individual study.

The greatest discrepancy in education lies in the realm of classroom instruction. If this discrepancy is to be removed, it must be done through experimentation.

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<sup>1</sup>Donald D. Durrell, Improving Reading Instruction (New York: World Book Company, 1956), p. 129.

<sup>2</sup>Donald D. Durrell and Viola A. Palos, "Pupil Study Teams in Reading," Education (May, 1956), 76:553.

<sup>3</sup>Durrell, Improving Reading Instruction, p. 387.

## CHAPTER III

### RESEARCH PROCEDURES AND TECHNIQUES

#### Selection of the Population

Several colleges were approached, but finally the following schools were selected: Johnson C. Smith University, Charlotte, North Carolina; Bennett College, Greensboro, North Carolina; and the Agricultural and Technical College of North Carolina, Greensboro, North Carolina. From these schools, six sections of General Psychology were selected for the study, involving 200 students in their second year of college.

#### Preliminary Planning

The writer met with the heads of the psychology department of each school to explain the purposes and the plans of procedure to be used. The heads of the departments in turn explained the purposes and the plans of procedure to their deans. Approval was granted, and the study was scheduled for two sections of General Psychology in each of the above-named schools.

In order that the study might be put into operation, the writer held several conferences with those professors who would teach the course in General Psychology. A common course outline for General Psychology was designed for the schools involved in the study. Textbooks were critically analyzed and agreed upon. The same audio-visual aids were

common to all schools. The corner library in each school contained the same books and allied materials. A critical analysis of all jobs was made by the professors involved in the study. (See Appendix.) It was decided that ten jobs would cover amply the first course in psychology. A critical analysis of each evaluation was made in light of good test construction. (See Appendix.) At each conference, the idea of team learning and its implications were discussed in detail. Group dynamics and the psychology of individual differences were also on the agenda for each conference. Lecture dynamics and procedure were discussed and agreed upon. The experiences of the writer with reference to team learning were critically analyzed.

It was made clear that the following procedures for the experimental and control classes had to be adhered to:

Experimental Classes

1. All experimental classes will be divided into teams of three or four students.
2. Each group will receive a job sheet.
3. Procedures of mutual aid and interaction will be explained and established.
4. Students proceed through job sheet at their own rates.
5. When ready for an evaluation the student notifies the professor and the evaluation will be administered.

Control Classes

1. All control classes will be left intact.
2. The same job sheet as used in the experimental classes will be distributed to the students.
3. The professor is free to lecture as usual with the admonition that material on job sheet be covered.
4. Students are paced by the professor. Every student does the same job sheets at the same time.
5. Evaluations are given by the professor following the completion of each job sheet.

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| <p>6. Class attendance is required.</p> <p>7. The professor is on hand for guidance, instruction, or any aid students may request.</p> <p>8. A corner library of materials will be available for class and outside use.</p> <p>9. Suggested films, filmstrips, and other audio-visual materials will be distributed to the class and used by teams as <u>they</u> deem necessary.<br/>Note: Teams are flexible and can change as students find partners who work more nearly at the same pace.</p> | <p>6. Class attendance is required.</p> <p>7. Professor lectures. Students take notes and ask questions.</p> <p>8. A corner library identical to that of the experimental class will be available for class and outside use.</p> <p>9. The professor determines audio-visual materials to be used and presents them to the class at his discretion.</p> |
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### The Classes

After registration and after the class rolls (for the experimental and control classes) had become stable, the college ability scores made upon entering college and the grade point averages made the previous school quarter were collected for each student, and the "t" test of significance was applied. Results of these tests may be found in Chapter IV.\*

### Procedure for Experimental Classes

Teams of four students were formed at the first class meeting. No effort was made to place the students according to ability. It was assumed that regrouping would take place under student impetus as dif-

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\*From this point on, Johnson C. Smith University will be referred to as School A, the Agricultural and Technical College of North Carolina will be referred to as School B, and Bennett College will be referred to as School C.

ferences in rate and assimilation of material became apparent. This assumption proved to be correct.

Within the first week of school, the teams began to modify themselves and this modification continued for the entire school period. At the end of the school period, there were basically three types of teams--the high achievers, average achievers, and the low achievers.

Job sheet number one was given to each student. These sheets were self-directing and permitted students to study together and assist each other until a complete understanding of the job was attained. Sample job sheet may be found in the Appendix.

Materials in the form of books and audio-visual aids were available for all students so that it was possible to delve deeply into any assigned topic.

Evaluation was handled by means of ten check tests which fell at predetermined places within the course of study. Whenever a student felt capable of taking such a test, he indicated this to his professor and an individual test was administered. This means, in effect, that students went through the materials as fast as they were able. If the student passed the evaluation successfully, he advanced immediately to the next job sheet. A minimum score of 75 was necessary to pass the evaluation. This score was based on the median of the "C" range, as stated in the college catalogues. It was further made clear to the classes that professors would serve as consultants and team leaders if such were necessary.

The role of the professor varied from that of a standard classroom. The professors were aware of the exact location of each student with reference to progress at all times and made adjustments in the teams as the need presented itself. Some of the adjustments were: (1) student adjustment within the team, (2) team adjustment based on progress rate, and (3) special assignments and help growing out of the natural interest of students beyond the job sheet scope.

After one week, it became necessary in all schools to utilize two classrooms. One classroom was used for those students desiring to take evaluations, and the other was used for those students desiring to continue team interaction.

Tangential problems constantly presented themselves in teams of high achievers. In such cases, the professor would resort to the lecture-explanation technique. However, in many cases the professor and team became research partners in search for the answers to these problems. This was conducive to bringing about a wholesome relationship between professor and team.

The work with slower teams differed greatly from the work done with faster teams. In all cases the work took on the tone of the tutorial technique. Many team and individual conferences were held. Some were scheduled at times other than the regular class hour. These conferences were highly repetitious and laborious in nature.

#### Procedure for Control Classes

Job sheets exactly the same as those in the experimental group were given to each student in the control classes. The students were

instructed to use the sheets as a guide to their study.

The role of the professor followed the standard pattern. Lectures were presented, and each topic was developed under teacher guidance. Students were encouraged to ask questions, and frequent discussion sessions were stimulated by the professors.

Identical evaluations were administered at the end of each job. In these classes, however, all students were tested together on a date determined by the professor.

Materials in the way of books and audio-visual aids were identical to those available to students in the experimental classes. Students were encouraged to use these materials to supplement text and lecture information.

#### Construction of Tests

In a conference with all professors participating in the study, it was decided that nine check tests would be a sufficient number to insure that students were not proceeding beyond the point where it would be possible to correct misconceptions.

The tenth test was to be given at the end of the study. This was an inventory-type test to cover the major concepts within the six units which made up the course in General Psychology.

Areas covered by the tests are listed below:

1. History of Psychology
2. Growth and Development
3. Motivation and Emotion
4. Learning and Thinking

5. Remembering and Forgetting
6. Personality
7. Mental Health
8. Vocational Adjustment
9. Intelligence
10. Inventory-Type Review Test

All of the above tests may be found in the Appendix.

The tests were constructed by the writer. All items were based upon the major concepts studied in each unit. Each test contained 100 items divided into three sections: (1) multiple choice, (2) true-false, and (3) matching.

Each evaluation was subjected to a test of reliability, using the split-half technique. The following table shows the reliability coefficients of these tests:

TABLE 1

RELIABILITY OF TESTS

Test No.	I	II	III	IV	V	VI	VII	VIII	IX	X
r	.50	.75	.92	.94	.93	.92	.86	.85	.83	.74

For the final test it was decided to do an item analysis in order to determine the internal consistency of the measure. The writer used the Tetrachoric correlation coefficient, with the criterion dichotomized at the median.

Wood<sup>1</sup> makes the following observation with reference to the Tetrachoric  $r$ :

If  $P_u$  is greater than  $P_l$ , the coefficient is positive. If  $P_l$  is greater than  $P_u$ , the coefficient is negative and is obtained by reversing the scales for  $P_l$  and  $P_u$ . As the percentages in the two groups passing the items approach 100 or 0, the coefficient is so greatly affected by chance that it cannot be estimated accurately.

The Tetrachoric correlation coefficient assumes that both the item and the criterion variable are continuous and normally distributed. It uses, however, just two categories of information about both variables: pass or fail in the case of the item, and the upper or lower group in the case of the criterion.

The scales referred to in the first paragraph of the above quotation may be found in the Appendix.

The following table shows the results of the item analysis. .

TABLE 2  
ITEM ANALYSIS OF THE FINAL EXAMINATION

Item	Upper Pass	Lower Pass	% Pass	Tetrachoric Correlation
1	.65	.46	.55	.30
2	.72	.54	.63	.31
3	.81	.23	.52	.81
4	.77	.35	.56	.62
5	.61	.22	.42	.60
6	.90	.33	.61	.82
7	.68	.36	.52	.48
8	.77	.21	.49	.78
9	.95	.32	.64	.92
10	.47	.18	.33	.51

(continued on next page)

<sup>1</sup>Dorothy Adkins Wood, Test Construction: Development and Interpretation of Achievement Tests (Columbus, Ohio: Charles E. Merrill Books, Inc., 1960), p. 86.

TABLE 2 (continued)

Item	Upper Pass	Lower Pass	% Pass	Tetrachoric Correlation
11	.61	.43	.52	.28
12	.44	.29	.36	.25
13	.86	.30	.58	.78
14	.65	.20	.42	.65
15	.53	.14	.34	.65
16	.98	.43	.71	.91
17	.84	.45	.64	.62
18	.64	.28	.46	.54
19	.73	.34	.53	.58
20	.54	.28	.41	.48
21	.54	.18	.36	.58
22	.60	.28	.44	.49
23	.85	.43	.64	.65
24	.72	.30	.51	.62
25	.89	.16	.53	.93
26	.82	.22	.52	.81
27	.62	.21	.41	.61
28	.45	.16	.30	.50
29	.70	.36	.53	.51
30	.40	.16	.28	.44
31	.60	.23	.41	.58
32	.94	.34	.64	.88
33	.51	.16	.34	.58
34	.99	.66	.83	.85
35	.66	.25	.46	.61
36	.61	.20	.40	.62
37	.72	.51	.61	.34
38	.36	.16	.26	.39
39	.90	.46	.68	.72
40	.80	.32	.56	.70
41	.59	.16	.38	.68
42	.45	.11	.28	.61
43	.74	.42	.58	.50
44	.62	.24	.43	.59
45	.99	.22	.60	.98

(continued on next page)

TABLE 2 (continued)

Item	Upper Pass	Lower Pass	% Pass	Tetrachoric Correlation
46	.66	.29	.48	.55
47	.83	.49	.66	.56
48	.52	.12	.32	.66
49	.87	.47	.67	.65
50	.72	.30	.51	.62
51	.34	.13	.42	.42
52	.54	.20	.37	.61
53	.72	.15	.43	.80
54	.62	.14	.38	.71
55	.76	.27	.52	.70
56	.47	.20	.33	.46
57	.61	.26	.43	.52
58	.65	.43	.54	.34
59	.41	.13	.27	.51
60	.59	.23	.41	.58
61	.66	.23	.45	.64
62	.42	.13	.28	.52
63	.68	.21	.45	.69
64	.80	.25	.53	.76
65	.75	.27	.51	.69
66	.62	.24	.43	.59
67	.50	.20	.35	.39
68	.72	.23	.47	.70
69	.52	.25	.39	.42
70	.77	.30	.54	.68
71	.68	.33	.57	.52
72	.55	.16	.36	.62
73	.75	.36	.55	.59
74	.54	.18	.36	.59
75	.64	.24	.44	.63
76	.73	.31	.52	.61
77	.77	.54	.66	.39
78	.75	.45	.60	.48
79	.47	.16	.31	.52
80	.65	.32	.48	.50

(concluded on next page)

TABLE 2 (concluded)

Item	Upper Pass	Lower Pass	% Pass	Tetrachoric Correlation
81	.98	.82	.90	.60
82	.63	.29	.46	.52
83	.88	.61	.74	.51
84	.81	.59	.68	.40
85	.53	.16	.35	.60
86	.62	.30	.46	.49
87	.53	.21	.37	.59
88	.84	.29	.57	.78
89	.43	.17	.30	.45
90	.87	.42	.64	.70
91	.72	.27	.49	.64
92	.63	.18	.41	.68
93	.88	.47	.67	.68
94	.62	.20	.41	.64
95	.62	.25	.43	.58
96	.72	.29	.51	.62
97	.96	.54	.75	.78
98	.51	.11	.68	.68
99	.85	.41	.63	.69
100	.68	.22	.45	.68

In all items the tetrachoric  $r$  with the criterion dichotomized at the median is positive. In no item did  $P_l$  exceed  $P_u$ . The mean difference between upper pass and lower pass is 38.60. Wood<sup>1</sup> observes:

When the percentage passing the item in the upper criterion group is higher than the corresponding percentage in the lower group, the item correlates positively with the criterion. When these two percentages are about equal, the item is serving no useful purpose, because its correlation with the criterion is approximately zero. When significantly more students in the lower group than in the upper group select the right answer to an item (or when  $P_l$  exceeds  $P_u$ ), the item actually has negative validity. Assuming that the criterion itself has validity, the item is not only useless but actually serving to decrease the validity of the test.

<sup>1</sup>Op. cit., pp. 86-87.

## CHAPTER IV

### ANALYSIS OF DATA

#### Statement of the Problem

It is the purpose of this study to introduce team learning to classes in general psychology at the college level. The problem is threefold: first, to see if effective provisions for the learning needs of college students can be made through the method of team learning; second, to see if the achievement of those students participating in team learning will differ significantly from the achievement of those students in classes where the lecture method is being employed; and third, to discover whether students will differ significantly, with reference to retention, one school quarter after participating in team learning, from those students participating in lecture classes.

The data were analyzed to answer the following questions:

1. Does the team learning technique produce better results than the standard procedure?
2. Were the results different on each of the subject evaluations?
3. With a lapse of time, do students involved in the team learning technique remember more of the subject content?

This study was predicated on the null hypothesis that both experimental and control groups were equal at the beginning of the study using two criteria: previous college grades and general college ability scores. The one per cent level was used to determine the significance of the difference.

Data Related to Equating Groups

Since School A is on the 3.00 grading system, and Schools B and C are on the 4.00 grading system, the writer equated the value of grade point averages of School A to the 4.00 system in order that all grade point averages would have the same value. The following table shows the position of both experimental and control groups on the basis of grade point averages.

TABLE 3

DISTRIBUTION OF GRADE POINT AVERAGES  
SHOWING MEAN, STANDARD DEVIATION, AND "t" RATIO OF STUDENTS  
UPON ENTERING GENERAL PSYCHOLOGY FOR ALL SCHOOLS

Class Limits	Team Learning Classes		Lecture Classes	
	F		F	
4.00 -				
3.50 - 3.99	6		3	
3.00 - 3.49	7		4	
2.50 - 2.99	19		13	
2.00 - 2.49	21		16	
1.50 - 1.99	26		35	
1.00 - 1.49	11		14	
.50 - .99	12		9	
.00 - .49	2		2	
Total	104		94	
Mean	1.889		1.893	
Standard Deviation	.66		.75	
"t" Ratio		.59		

An examination of Table 3 shows that the two means were very similar, the difference being only .004 of a point. The "t" ratio of .59 is so low as to be without statistical significance, and shows the groups to be equal in terms of grade point averages.

Tables 4, 5, and 6 show the distribution of grade point averages, mean, standard deviation, and "t" ratio, by schools, of students upon entering General Psychology.

TABLE 4  
DISTRIBUTION OF GRADE POINT AVERAGES, MEAN,  
STANDARD DEVIATION, AND "t" RATIO FOR SCHOOL A

Class Limits	<u>Team Learning Classes</u>	<u>Lecture Classes</u>
	F	F
3.00 -		
2.50 - 2.99	2	1
2.00 - 2.49	4	8
1.50 - 1.99	14	9
1.00 - 1.49	14	15
.50 - .99	9	4
.00 - .49		1
Total	43	38
Mean	1.54	1.49
Standard Deviation	.55	.47
"t" Ratio	.43	

The means of 1.54 and 1.49 are very close and the difference yields a "t" ratio of .43, which is not statistically significant.

TABLE 5  
 DISTRIBUTION OF GRADE POINT AVERAGES, MEAN,  
 STANDARD DEVIATION, AND "t" RATIO FOR SCHOOL B

Class Limits	<u>Team Learning Classes</u>	<u>Lecture Classes</u>
	F	F
4.00 -		
3.50 - 3.99	2	1
3.00 - 3.49	2	2
2.50 - 2.99	2	3
2.00 - 2.49	4	4
1.50 - 1.99	9	10
1.00 - 1.49	6	5
.50 - .99	6	4
.00 - .49	1	1
Total	32	30
Mean	1.81	1.81
Standard Deviation	.89	.81
"t" Ratio		0

The means on the above table are identical and the variation of the standard deviation is very slight. The resulting "t" score of 0 shows the groups to be statistically equal.

TABLE 6  
 DISTRIBUTION OF GRADE POINT AVERAGES, MEAN,  
 STANDARD DEVIATION, AND "t" RATIO FOR SCHOOL C

Class Limits	<u>Team Learning Classes</u>		<u>Lecture Classes</u>	
	F		F	
4.00 -				
3.50 - 3.99	2			
3.00 - 3.49	1		1	
2.50 - 2.99	3		2	
2.00 - 2.49	3		5	
1.50 - 1.99	8		9	
1.00 - 1.49	5		5	
.50 - .99	6		4	
.00 - .49	1		1	
<b>Total</b>	<b>29</b>		<b>26</b>	
<b>Mean</b>	<b>1.75</b>		<b>1.69</b>	
<b>Standard Deviation</b>	<b>.88</b>		<b>.70</b>	
<b>"t" Ratio</b>		<b>.27</b>		

An examination of the above table shows the two means were very similar, the difference being only .06 of a point. The "t" ratio of .27 is so low as to be without statistical significance, and shows the groups to be equal in terms of grade point averages.

A second criterion used to equate the groups was college ability scores made upon entering college. Table 7 shows the total distribution of college ability scores, mean, standard deviation, and "t" ratio.

TABLE 7  
 DISTRIBUTION OF COLLEGE ABILITY SCORES, MEAN,  
 STANDARD DEVIATION, AND "t" RATIO FOR ALL SCHOOLS

Class Limits	Team Learning Classes		Lecture Classes	
	F		F	
325 - 329	3		3	
320 - 324	5		5	
315 - 319	5		6	
310 - 314	3		6	
305 - 309	6		4	
300 - 304	7		10	
295 - 299	10		8	
290 - 294	15		7	
285 - 289	4		10	
280 - 284	13		12	
275 - 279	9		8	
270 - 274	9		4	
265 - 269	4		1	
260 - 264	4		3	
255 - 259	5		6	
250 - 254	2		1	
Total	104		94	
Mean	289.20		291.88	
Standard Deviation	18.72		18.85	
"t" Ratio			1.00	

An examination of Table 7 shows the two means were very similar, the difference being less than 3, or 2.68. The "t" ratio of 1.00 is so low as to be without statistical significance, and shows the groups to be equal in terms of college ability.

Tables 8, 9, and 10 show the distribution of college ability scores, mean, standard deviation, and "t" ratio by schools.

TABLE 8  
DISTRIBUTION OF COLLEGE ABILITY SCORES, MEAN,  
STANDARD DEVIATION, AND "t" RATIO FOR SCHOOL A

Class Limits	<u>Team Learning Classes</u>	<u>Lecture Classes</u>
	F	F
325 - 329	2	1
320 - 324	1	2
315 - 319	1	2
310 - 314	1	3
305 - 309	4	3
300 - 304	1	6
295 - 299	4	3
290 - 294	8	3
285 - 289	2	5
280 - 284	7	5
275 - 279	2	2
270 - 274	5	1
265 - 269	2	1
260 - 264	2	1
255 - 259	1	
Total	43	38
Mean	289.21	295.80
Standard Deviation	17.30	15.90
"t" Ratio		1.48

The means are very close and the difference yields a "t" ratio of 1.48, which is not statistically significant and shows the classes to be equal in terms of college ability.

Table 9 shows the distribution of college ability scores, mean, standard deviation, and "t" ratio for School B.

TABLE 9  
DISTRIBUTION OF COLLEGE ABILITY SCORES, MEAN,  
STANDARD DEVIATION, AND "t" RATIO FOR SCHOOL B

Class Limits	<u>Team Learning Classes</u>	<u>Lecture Classes</u>
	F	F
325 - 329	1	1
320 - 324	3	1
315 - 319	2	2
310 - 314		2
305 - 309		1
300 - 304	6	2
295 - 299		2
290 - 294	3	2
285 - 289		1
280 - 284	5	3
275 - 279	4	4
270 - 274	2	1
265 - 269	1	
260 - 264	1	2
255 - 259	3	5
250 - 254	1	1
Total	32	30
Mean	288.41	285.44
Standard Deviation	21.18	22.09
"t" Ratio		.54

An examination of Table 9 shows the two means to be very similar, the difference being less than 3, or 2.97. The "t" ratio of .54 is so low as to be without statistical significance, and shows the classes to be equal in terms of college ability.

Table 10 shows the distribution of college ability scores, mean, standard deviation, and "t" ratio for School C.

TABLE 10  
DISTRIBUTION OF COLLEGE ABILITY SCORES, MEAN,  
STANDARD DEVIATION, AND "t" RATIO FOR SCHOOL C

Class Limits	Team Learning Classes		Lecture Classes	
	F		F	
325 - 329				1
320 - 324	1			2
315 - 319	2			2
310 - 314	2			1
305 - 309	2			
300 - 304				2
295 - 299	6			3
290 - 294	4			2
285 - 289	2			4
280 - 284	1			4
275 - 279	3			2
270 - 274	2			2
265 - 269	1			
260 - 264	1			
255 - 259	1			1
250 - 254	1			
Total	29		26	
Mean	295.10		293.35	
Standard Deviation	18.02		17.40	
"t" Ratio			.36	

The means are very close, and the difference yields a "t" ratio of .36, which is not statistically significant and shows the classes to be equal in terms of college ability.

With reference to equating groups, there is no significant difference between classes within schools and between schools. The control

and experimental groups can be assumed to be equal on the basis of the two variables considered.

Data Related to Final Test Scores

Table 11 shows the total distribution of scores, mean, standard deviation, and "t" ratio for the final examination.

TABLE 11

DISTRIBUTION OF SCORES, MEAN, STANDARD DEVIATION,  
AND "t" RATIO FOR THE FINAL EXAMINATION FOR ALL SCHOOLS

Class Limits	<u>Team Learning Classes</u>		<u>Lecture Classes</u>	
	F		F	
94 - 96	1			
91 - 93	5			
88 - 90	5		1	
85 - 87	9			
82 - 84	9		2	
79 - 81	8		5	
76 - 78	13		3	
73 - 75	17		11	
70 - 72	11		11	
67 - 69	5		10	
64 - 66	6		10	
61 - 63	2		15	
58 - 60	2		6	
55 - 57	2		2	
52 - 54	3		3	
49 - 51	2		5	
46 - 48				
43 - 45			1	
Total	100		84	
Mean	75.44		66.56	
Standard Deviation	10.02		8.72	
"t" Ratio			6.43	

With reference to the final examination, the difference between the means is 8.88. The "t" ratio of 6.43 is very high and is statistically significant in favor of the experimental group.

Tables 12, 13, and 14 show the distribution of scores, mean, standard deviation, and "t" ratio for final examination by schools.

TABLE 12

DISTRIBUTION OF FINAL EXAMINATION SCORES, MEAN,  
STANDARD DEVIATION, AND "t" RATIO FOR SCHOOL A

Class Limits	<u>Team Learning Classes</u>		<u>Lecture Classes</u>	
	F		F	
92 - 94	1			
89 - 91	1			
86 - 88	2			
83 - 85	3		1	
80 - 82	5		1	
77 - 79	4		1	
74 - 76	4		1	
71 - 73	7		3	
68 - 70	7		2	
65 - 67	2		8	
62 - 64	3		6	
59 - 61			2	
56 - 58			1	
53 - 55				
50 - 52			1	
47 - 49			1	
Total	39		28	
Mean	75.48		66.98	
Standard Deviation	7.05		11.04	
"t" Ratio			3.58	

An examination of Table 12 shows the means to differ by 8.50 points. The "t" ratio of 3.58 is high and is statistically significant in favor of the team learning group.

TABLE 13

DISTRIBUTION OF FINAL EXAMINATION SCORES, MEAN,  
STANDARD DEVIATION, AND "t" RATIO FOR SCHOOL B

Class Limits	<u>Team Learning Classes</u>		<u>Lecture Classes</u>	
	F		F	
86 - 87	1		1	
84 - 85	1			
82 - 83	1			
80 - 81	4		1	
78 - 79	3			
76 - 77	2		1	
74 - 75	5		2	
72 - 73	6		2	
70 - 71	3		2	
68 - 69	4		3	
66 - 67			3	
64 - 65			5	
62 - 63			5	
60 - 61	1		1	
58 - 59			1	
56 - 57			1	
54 - 55				
52 - 53	1		1	
Total	32		30	
Mean	74.06		66.30	
Standard Deviation	6.61		7.32	
"t" Ratio			4.31	

The difference between the means is 5.76 points. The "t" ratio of 4.31 is statistically significant in favor of the experimental group.

TABLE 14

DISTRIBUTION OF FINAL EXAMINATION SCORES, MEAN,  
STANDARD DEVIATION, and "t" RATIO FOR SCHOOL C

Class Limits	Team Learning Classes	Lecture Classes
	F	F
90 - 92	1	
87- 89		1
84 - 86		
81 - 83	2	
78 - 80	4	2
75 - 77	2	2
72 - 74	3	1
69 - 71	7	4
66 - 68	2	2
63 - 65	3	1
60 - 62	3	7
57 - 59	1	
54 - 56		1
51 - 53		1
48 - 50		2
45 - 47		1
42 - 44		1
Total	28	26
Mean	71.38	64.19
Standard Deviation	7.77	10.26
"t" Ratio		3.67

Although the difference in means for School C is less than in Schools A and B, the "t" ratio of 3.67 is statistically significant at the one per cent level of confidence.

Comparison of Groups on Check Tests

Table 15 shows the total distribution of scores, mean, standard deviation, and "t" ratio for check test number one.

TABLE 15

DISTRIBUTION OF SCORES, MEAN, STANDARD DEVIATION, AND "t" RATIO  
FOR CHECK TEST NUMBER ONE FOR ALL SCHOOLS

Class Limits	<u>Team Learning Classes</u>	<u>Lecture Classes</u>
	F	F
95 - 99	2	
90 - 94	5	
85 - 89	5	2
80 - 84	22	5
75 - 79	22	9
70 - 74	22	11
65 - 69	9	19
60 - 64	6	15
55 - 59	4	15
50 - 54	2	4
45 - 49	2	3
40 - 44	3	
35 - 39		1
30 - 34		1
Total	104	84
Mean	74.13	65.53
Standard Deviation	11.02	10.62
"t" Ratio		5.40

With reference to check test number one, the difference between the means is 8.60. The "t" ratio of 5.40 is very high and is statistically significant in favor of the experimental group.

Tables 16, 17, and 18 show the distribution of scores, mean, standard deviation, and "t" ratio for check test number one by schools.

TABLE 16

DISTRIBUTION OF SCORES, MEAN, STANDARD DEVIATION, AND "t" RATIO  
FOR CHECK TEST NUMBER ONE SCHOOL A

Class Limits	<u>Team Learning Classes</u>		<u>Lecture Classes</u>	
	F		F	
90 - 94	2			
85 - 89	2			
80 - 84	7		1	
75 - 79	12		1	
70 - 74	9		4	
65 - 69	5		8	
60 - 64	3		4	
55 - 59	2		8	
50 - 54			1	
45 - 49	1		2	
40 - 44				
35 - 39			1	
Total	43		30	
Mean	74.07		63.38	
Standard Deviation	7.71		9.57	
"t" Ratio			5.01	

The difference between the means is 10.69 points. The "t" ratio of 5.01 is statistically significant in favor of the team learning group.

TABLE 17

DISTRIBUTION OF SCORES, MEAN, STANDARD DEVIATION, AND "t" RATIO  
FOR CHECK TEST NUMBER ONE, SCHOOL B

Class Limits	<u>Team Learning Classes</u>	<u>Lecture Classes</u>
	F	F
93 - 95	1	
90 - 92	1	
87 - 89	1	1
84 - 86	1	1
81 - 83	3	
78 - 80	7	
75 - 77	6	5
72 - 74	4	2
69 - 71	3	5
66 - 68	1	5
63 - 65	1	5
60 - 62	1	2
57 - 59	1	2
54 - 56		
51 - 53		2
48 - 50		
45 - 47	1	
Total	32	30
Mean	76.27	68.16
Standard Deviation	7.55	7.76
"t" Ratio		4.10

An examination of Table 17 shows the means to differ by 8.11 points. The "t" ratio of 4.10 is statistically significant in favor of the experimental group.

TABLE 18

DISTRIBUTION OF SCORES, MEAN, STANDARD DEVIATION, AND "t" RATIO  
FOR CHECK TEST NUMBER ONE, SCHOOL C

Class Limits	<u>Team Learning Classes</u>		<u>Lecture Classes</u>	
	F		F	
95 - 99	2			
90 - 94	1			
85 - 89	1			
80 - 84	7		4	
75 - 79	8		3	
70 - 74	2		3	
65 - 69	1		2	
60 - 64	1		6	
55 - 59	1		5	
50 - 54	2		1	
45 - 49			1	
40 - 44	3			
35 - 39				
30 - 34			1	
Total	29		26	
Mean	73.20		65.76	
Standard Deviation	15.06		12.33	
"t" Ratio			2.02	

An examination of the above table shows a difference of 7.44 points between means. The "t" ratio of 2.02 is not statistically significant at the one per cent level of confidence used in this study, but it does meet the criterion for significance at the five per cent level.

TABLE 19

DISTRIBUTION OF SCORES, MEAN, STANDARD DEVIATION, AND "t" RATIO  
FOR CHECK TEST NUMBER TWO FOR ALL SCHOOLS

Class Limits	<u>Team Learning Classes</u>	<u>Lecture Classes</u>
	F	F
90 - 94	12	1
85 - 89	8	5
80 - 84	14	3
75 - 79	26	9
70 - 74	28	9
65 - 69	10	17
60 - 64	1	13
55 - 59	2	10
50 - 54		6
45 - 49	3	6
40 - 44		2
35 - 39		2
30 - 34		1
Total	104	84
Mean	76.87	64.40
Standard Deviation	9.63	12.56
"t" Ratio		7.47

With respect to check test number two in all schools, the difference between the means is 12.47. The "t" ratio of 7.47 is statistically significant in favor of the team learning group.

Tables 20, 21, and 22 show the distribution of scores, mean, standard deviation, and "t" ratio for check test number two by schools.

TABLE 20

DISTRIBUTION OF SCORES, MEAN, STANDARD DEVIATION, AND "t" RATIO  
FOR CHECK TEST NUMBER TWO, SCHOOL A

Class Limits	<u>Team Learning Classes</u>	<u>Lecture Classes</u>
	F	F
86 - 88	3	1
83 - 85	6	
80 - 82	2	
77 - 79	5	2
74 - 76	8	3
71 - 73	4	3
68 - 70	4	4
65 - 67	3	6
62 - 64		4
59 - 61		2
56 - 58		2
53 - 55		
50 - 52		2
47 - 49		
44 - 46	1	
Total	43	29
Mean	75.06	66.88
Standard Deviation	7.50	7.92
"t" Ratio		4.35

The difference between the means is 8.18 points. The "t" ratio of 4.35 is statistically significant in favor of the team learning group.

TABLE 21

DISTRIBUTION OF SCORES, MEAN, STANDARD DEVIATION, AND "t" RATIO  
FOR CHECK TEST NUMBER TWO, SCHOOL B

Class Limits	<u>Team Learning Classes</u>		<u>Lecture Classes</u>	
	F		F	
90 - 94	7		1	
85 - 89	2		1	
80 - 84	3		1	
75 - 79	7		2	
70 - 74	9		3	
65 - 69	2		3	
60 - 64			5	
55 - 59	1		6	
50 - 54			4	
45 - 49	1		2	
40 - 44				
35 - 39			1	
30 - 34			1	
Total	32		30	
Mean	77.89		61.80	
Standard Deviation	10.41		13.25	
"t" Ratio			5.21	

An examination of Table 21 shows the means to differ by 16.09 points. The "t" ratio of 5.21 is high and statistically significant in favor of the experimental group.

TABLE 22

DISTRIBUTION OF SCORES, MEAN, STANDARD DEVIATION, AND "t" RATIO  
FOR CHECK TEST NUMBER TWO, SCHOOL C

Class Limits	<u>Team Learning Classes</u>		<u>Lecture Classes</u>	
	F		F	
93 - 95	1			
90 - 92	4			
87 - 89	3		1	
84 - 86			2	
81 - 83	2			
78 - 80	3		2	
75 - 77	3		2	
72 - 74	6		1	
69 - 71	4		4	
66 - 68			2	
63 - 65			1	
60 - 62	1		3	
57 - 59			1	
54 - 56	1			
51 - 53				
48 - 50	1		1	
45 - 47			3	
42 - 44			2	
39 - 41				
36 - 38			1	
Total	29		26	
Mean	77.02		65	
Standard Deviation	10.68		14.19	
"t" Ratio			3.45	

An examination of the above table shows a difference of 12.02 points between means. The "t" ratio of 3.45 is statistically significant in favor of the experimental group.

Table 23 shows the distribution of scores, mean, standard deviation, and "t" ratio for check test number three for all schools.

TABLE 23  
DISTRIBUTION OF SCORES, MEAN, STANDARD DEVIATION, AND "t" RATIO  
FOR CHECK TEST NUMBER THREE FOR ALL SCHOOLS

Class Limits	<u>Team Learning Classes</u>	<u>Lecture Classes</u>
	F	F
95 - 99	3	
90 - 94	10	
85 - 89	14	5
80 - 84	16	6
75 - 79	27	10
70 - 74	21	18
65 - 69	4	10
60 - 64	1	14
55 - 59	2	9
50 - 54	3	4
45 - 49	1	5
40 - 44		3
35 - 39		1
Total	102	85
Mean	78.25	66.45
Standard Deviation	9.73	11.74
"t" Ratio		7.35

An examination of Table 23 shows the means to differ by 11.80 points. The "t" ratio of 7.35 is highly significant in favor of the experimental group.

Tables 24, 25, and 26 show the distribution of scores, mean, standard deviation, and "t" ratio for check test number three by schools.

TABLE 24

DISTRIBUTION OF SCORES, MEAN, STANDARD DEVIATION, AND "t" RATIO  
FOR CHECK TEST NUMBER THREE, SCHOOL A

Class Limits	<u>Team Learning Classes</u>		<u>Lecture Classes</u>	
	F		F	
93 - 95	1			
90 - 92	1			
87 - 89	1		1	
84 - 86				
81 - 83	5		1	
78 - 80	7		1	
75 - 77	10		2	
72 - 74	4		5	
69 - 71	8		5	
66 - 68			2	
63 - 65	1		3	
60 - 62			4	
57 - 59	1		1	
54 - 56				
51 - 53	1		1	
48 - 50	1		1	
45 - 47			1	
42 - 44				
39 - 41			1	
Total	41		29	
Mean	77.88		66.48	
Standard Deviation	7.82		10.82	
"t" Ratio			3.56	

The difference between the means is 8.40 points. The "t" ratio of 3.56 is statistically significant in favor of the experimental group.

TABLE 25

DISTRIBUTION OF SCORES, MEAN, STANDARD DEVIATION, AND "t" RATIO  
FOR CHECK TEST NUMBER THREE, SCHOOL B

Class Limits	Team Learning Classes		Lecture Classes	
	F		F	
94 - 96	3			
91 - 93	1			
88 - 90	4		1	
85 - 87	4		1	
82 - 84	2		1	
79 - 81	4		1	
76 - 78	5		3	
73 - 75	2		1	
70 - 72	2		5	
67 - 69	2		2	
64 - 66			7	
61 - 63			2	
58 - 60			2	
55 - 57	1			
52 - 54			2	
49 - 51	1			
46 - 48			1	
43 - 45	1		1	
Total	32		30	
Mean	79.82		67.69	
Standard Deviation	11.55		10.56	
"t" Ratio			4.45	

An examination of Table 25 shows the means to differ by 12.69 points. This difference, which is in favor of the experimental group, is statistically significant.

TABLE 26

DISTRIBUTION OF SCORES, MEAN, STANDARD DEVIATION, AND "t" RATIO  
FOR CHECK TEST NUMBER THREE, SCHOOL C

Class Limits	<u>Team Learning Classes</u>		<u>Lecture Classes</u>	
	F		F	
92 - 94	4			
89 - 91	2			
86 - 88	2		1	
83 - 85	7		2	
80 - 82	3		2	
77 - 79	7		3	
74 - 76	1		2	
71 - 73				
68 - 70	2		2	
65 - 67	1			
62 - 64			1	
59 - 61			2	
56 - 58			5	
53 - 55			1	
50 - 52			1	
47 - 49			1	
44 - 46			1	
41 - 43			2	
Total	29		26	
Mean	82.32		64.95	
Standard Deviation	6.92		13.71	
"t" Ratio			5.72	

The difference between the means is 17.37 points. This difference is very large and yields a "t" ratio of 5.72, which is statistically significant in favor of the team learning group.

Table 27 shows the distribution of scores, mean, standard deviation, and "t" ratio for check test number four for all schools.

TABLE 27  
DISTRIBUTION OF SCORES, MEAN, STANDARD DEVIATION, AND "t" RATIO  
FOR CHECK TEST NUMBER FOUR FOR ALL SCHOOLS

Class Limits	Team Learning Classes		Lecture Classes	
	F		F	
90 - 94	14			
85 - 89	16		2	
80 - 84	17		5	
75 - 79	27		16	
70 - 74	20		15	
65 - 69	4		14	
60 - 64	2		10	
55 - 59	3		6	
50 - 54			10	
45 - 49			5	
40 - 44			1	
35 - 39				
30 - 34			1	
Total	103		85	
Mean	79.09		66.43	
Standard Deviation	8.48		11.31	
"t" Ratio			8.50	

An examination of the above table shows a difference of 12.66 points between means. The "t" ratio of 8.50 is statistically significant in favor of the experimental group.

Tables 28, 29, and 30 show the distribution of scores, mean, standard deviation, and "t" ratio for check test number four by schools.

TABLE 28

DISTRIBUTION OF SCORES, MEAN, STANDARD DEVIATION, AND "t" RATIO  
FOR CHECK TEST NUMBER FOUR, SCHOOL A

Class Limits	<u>Team Learning Classes</u>	<u>Lecture Classes</u>
	F	F
90 - 92	3	
87 - 89	2	
84 - 86	3	1
81 - 83	6	1
78 - 80	8	3
75 - 77	5	3
72 - 74	6	2
69 - 71	5	4
66 - 68	2	6
63 - 65	1	3
60 - 62	1	3
57 - 59		
54 - 56		1
51 - 53		1
48 - 50		1
Total	42	29
Mean	78.22	69.12
Standard Deviation	6.98	9.03
"t" Ratio		4.50

The difference between means is 9.10 points. The "t" ratio of 4.50 is statistically significant in favor of the experimental group.

TABLE 29

DISTRIBUTION OF SCORES, MEAN, STANDARD DEVIATION, AND "t" RATIO  
FOR CHECK TEST NUMBER FOUR, SCHOOL B

Class Limits	<u>Team Learning Classes</u>		<u>Lecture Classes</u>	
	F		F	
94 - 96	1			
91 - 93	4			
88 - 90	6		1	
85 - 87	4		1	
82 - 84	4		2	
79 - 81	3		2	
76 - 78	4		3	
73 - 75	1		1	
70 - 72	2		4	
67 - 69			4	
64 - 66				
61 - 63	1		4	
58 - 60			4	
55 - 57	2		2	
52 - 54			1	
49 - 51			1	
Total	32		30	
Mean	81.18		68.76	
Standard Deviation	9.94		10.10	
"t" Ratio			4.84	

An examination of the above table shows a difference of 12.49 points between means. The "t" ratio of 4.84 is statistically significant in favor of the team learning group.

TABLE 30

DISTRIBUTION OF SCORES, MEAN, STANDARD DEVIATION, AND "t" RATIO  
FOR CHECK TEST NUMBER FOUR, SCHOOL C

Class Limits	<u>Team Learning Classes</u>		<u>Lecture Classes</u>	
	F		F	
90 - 94	3			
85 - 89	2		1	
80 - 84	9		1	
75 - 79	7		3	
70 - 74	6		2	
65 - 69			3	
60 - 64	1		2	
55 - 59	1		7	
50 - 54			2	
45 - 49			3	
40 - 44			1	
35 - 39				
30 - 34			1	
Total	29		26	
Mean	78.51		60.72	
Standard Deviation	8.42		13.44	
"t" Ratio			5.70	

An examination of Table 30 shows the means to differ by 17.79 points. The "t" ratio of 5.40 is statistically significant in favor of the experimental group.

Table 31 shows the distribution of scores, mean, standard deviation, and "t" ratio for check test number five for all schools.

TABLE 31  
DISTRIBUTION OF SCORES, MEAN, STANDARD DEVIATION, AND "t" RATIO  
FOR CHECK TEST NUMBER FIVE FOR ALL SCHOOLS

Class Limits	<u>Team Learning Classes</u>		<u>Lecture Classes</u>	
	F		F	
95 - 99	4			
90 - 94	9			
85 - 89	15		3	
80 - 84	16		7	
75 - 79	30		11	
70 - 74	18		14	
65 - 69	3		12	
60 - 64	2		19	
55 - 59	3		11	
50 - 54			6	
45 - 49	1		1	
40 - 44				
35 - 39				
30 - 34			1	
Total	101		85	
Mean	79.35		66.90	
Standard Deviation	9.04		10.30	
"t" Ratio			8.66	

An examination of the above table shows a difference of 12.45 points between means. The "t" ratio of 8.66 is statistically significant in favor of the experimental group.

Tables 32, 33, and 34 show the distribution of scores, mean, standard deviation, and "t" ratio for check test number five by schools.

TABLE 32

DISTRIBUTION OF SCORES, MEAN, STANDARD DEVIATION, AND "t" RATIO  
FOR CHECK TEST NUMBER FIVE, SCHOOL A

Class Limits	<u>Team Learning Classes</u>		<u>Lecture Classes</u>	
	F		F	
90 - 94	7			
85 - 89	4			
80 - 84	1		4	
75 - 79	12		4	
70 - 74	12		3	
65 - 69	2		2	
60 - 64			9	
55 - 59	1		3	
50 - 54			2	
45 - 49	1		1	
40 - 44				
35 - 39				
30 - 34			1	
Total	40		29	
Mean	77.56		65.88	
Standard Deviation	9.57		11.94	
"t" Ratio			4.29	

The difference between the means is 11.68 points. The "t" ratio of 4.29 is in favor of the experimental group and is statistically significant.

TABLE 33

DISTRIBUTION OF SCORES, MEAN, STANDARD DEVIATION, AND "t" RATIO  
FOR CHECK TEST NUMBER FIVE, SCHOOL B

Class Limits	<u>Team Learning Classes</u>		<u>Lecture Classes</u>	
	F		F	
94 - 96	3			
91 - 93	1			
88 - 90	2		1	
85 - 87	6		1	
82 - 84	5		1	
79 - 81	6		1	
76 - 78	4		1	
73 - 75			3	
70 - 72	3		6	
67 - 69	1		3	
64 - 66			2	
61 - 63	1		3	
58 - 60			2	
55 - 57			3	
52 - 54			2	
49 - 51			1	
Total	32		30	
Mean	81.24		67.38	
Standard Deviation	7.85		8.27	
"t" Ratio			6.63	

The difference between the means is 13.86 points. The "t" ratio of 6.63 is statistically significant in favor of the experimental group.

TABLE 34

DISTRIBUTION OF SCORES, MEAN, STANDARD DEVIATION, AND "t" RATIO  
FOR CHECK TEST NUMBER FIVE, SCHOOL C

Class Limits	Team Learning Classes		Lecture Classes	
	F		F	
92 - 94	1			
89 - 91				
86 - 88	3		1	
83 - 85	2			
80 - 82	6		1	
77 - 79	7		1	
74 - 76	4		5	
71 - 73	1		2	
68 - 70	2		4	
65 - 67			2	
62 - 64			4	
59 - 61	1		1	
56 - 58	2		3	
53 - 55			1	
50 - 52			1	
Total	29		26	
Mean	77.46		67.52	
Standard Deviation	8.26		8.78	
"t" Ratio			4.23	

An examination of the above table shows a difference of 9.94 points between means. The "t" ratio of 4.23 is high and is in favor of the team learning group.

Table 35 shows the distribution of scores, mean, standard deviation, and "t" ratio for check test number six for all schools.

TABLE 35  
DISTRIBUTION OF SCORES, MEAN, STANDARD DEVIATION, AND "t" RATIO  
FOR CHECK TEST NUMBER SIX FOR ALL SCHOOLS

Class Limits	<u>Team Learning Classes</u>	<u>Lecture Classes</u>
	F	F
95 - 99	3	
90 - 94	9	
85 - 89	11	8
80 - 84	21	7
75 - 79	16	10
70 - 74	18	10
65 - 69	10	16
60 - 64	3	12
55 - 59	2	5
50 - 54	4	4
45 - 49		7
40 - 44	4	4
35 - 39		2
Total	101	85
Mean	75.95	66.35
Standard Deviation	12.20	13.19
"t" Ratio		5.11

An examination of the above table shows a difference of 9.60 points between means. The "t" ratio of 5.11 is statistically significant in favor of the experimental group.

Tables 36, 37, and 38 show the distribution of scores, mean, standard deviation, and "t" ratio for check test number six by schools.

TABLE 36

DISTRIBUTION OF SCORES, MEAN, STANDARD DEVIATION, AND "t" RATIO  
FOR CHECK TEST NUMBER SIX, SCHOOL A

Class Limits	<u>Team Learning Classes</u>		<u>Lecture Classes</u>	
	F		F	
94 - 96	2			
91 - 93	1			
88 - 90	1		1	
85 - 87	1		2	
82 - 84	4			
79 - 81	6		3	
76 - 78	3		2	
73 - 75	7			
70 - 72	1		4	
67 - 69	1		4	
64 - 66	1		1	
61 - 63	2		4	
58 - 60			1	
55 - 57	2			
52 - 54	1			
49 - 51	3		1	
46 - 48			3	
43 - 45	1		2	
40 - 42	2			
37 - 39			1	
Total	39		29	
Mean	73.98		65.60	
Standard Deviation	14.71		14.58	
"t" Ratio			2.10	

An examination of the above table shows a difference of 8.38 points between means. The "t" ratio of 2.10, though in favor of the experimental group, is below the one per cent level of significance selected for this study.

TABLE 37

DISTRIBUTION OF SCORES, MEAN, STANDARD DEVIATION, AND "t" RATIO  
FOR CHECK TEST NUMBER SIX, SCHOOL B

Class Limits	<u>Team Learning Classes</u>	<u>Lecture Classes</u>
	F	F
91 - 93	2	
88 - 90	3	2
85 - 87	4	2
82 - 84	4	
79 - 81	3	3
76 - 78	3	2
73 - 75	5	
70 - 72	3	4
67 - 69	2	4
64 - 66	3	1
61 - 63		4
58 - 60		1
55 - 57		
52 - 54		
49 - 51		1
46 - 48		3
43 - 45		2
40 - 42		
37 - 39		1
Total	32	30
Mean	78.42	66.29
Standard Deviation	8.36	14.15
"t" Ratio		4.02

The above table shows a difference of 12.13 points between means. The "t" ratio of 4.02 is statistically significant in favor of the team learning group.

TABLE 38

DISTRIBUTION OF SCORES, MEAN, STANDARD DEVIATION, AND "t" RATIO  
FOR CHECK TEST NUMBER SIX, SCHOOL C

Class Limits	Team Learning Classes	Lecture Classes
	F	F
94 - 96	2	
91 - 93	1	
88 - 90	4	
85 - 87	1	1
82 - 84	1	1
79 - 81	4	2
76 - 78	4	3
73 - 75	4	2
70 - 72	4	2
67 - 69	1	5
64 - 66	2	
61 - 63	1	5
58 - 60		2
55 - 57		
52 - 54		3
Total	29	26
Mean	79.94	68.04
Standard Deviation	8.06	10.30
"t" Ratio		4.64

The difference between the means is 11.90 points. The "t" ratio of 4.64 is statistically significant in favor of the experimental group.

Table 39 shows the distribution of scores, mean, standard deviation, and "t" ratio for check test number seven for all schools.

TABLE 39  
DISTRIBUTION OF SCORES, MEAN, STANDARD DEVIATION, AND "t" RATIO  
FOR CHECK TEST NUMBER SEVEN FOR ALL SCHOOLS

Class Limits	Team Learning Classes		Lecture Classes	
	F		F	
95 - 97	1			
92 - 94	7			
89 - 91	4			
86 - 88	7		3	
83 - 85	18		3	
80 - 82	8		6	
77 - 79	17		7	
74 - 76	8		4	
71 - 73	8		6	
68 - 70	5		14	
65 - 67	4		5	
62 - 64	3		2	
59 - 61	5		8	
56 - 58	1		8	
53 - 55	3		2	
50 - 52	1		4	
47 - 49			5	
44 - 46			5	
41 - 43			1	
38 - 40			1	
35 - 37				
32 - 34			1	
Total	100		85	
Mean	77.46		65.13	
Standard Deviation	10.13		12.56	
"t" Ratio			7.22	

An examination of the above table shows a difference of 12.33 points between means. The "t" ratio of 7.22 is statistically significant in favor of the team learning group.

Tables 40, 41, and 42 show the distribution of scores, mean, standard deviation, and "t" ratio for check test number seven by schools.

TABLE 40

DISTRIBUTION OF SCORES, MEAN, STANDARD DEVIATION, AND "t" RATIO  
FOR CHECK TEST NUMBER SEVEN, SCHOOL A

Class Limits	<u>Team Learning Classes</u>		<u>Lecture Classes</u>	
	F		F	
89 - 91	2			
86 - 88	2		1	
83 - 85	6		2	
80 - 82				
77 - 79	7		3	
74 - 76	2		2	
71 - 73	6			
68 - 70	1		2	
65 - 67	3		2	
62 - 64	1		1	
59 - 61	4		3	
56 - 58	1		5	
53 - 55	3		1	
50 - 52	1		2	
47 - 49			2	
44 - 46			3	
41 - 43				
38 - 40				
35 - 37				
32 - 34			1	
Total	39		30	
Mean	71.54		61.68	
Standard Deviation	11.87		13.08	
"t" Ratio			3.19	

The difference between the means is 9.86 points. This difference yields a "t" ratio of 3.19, which is statistically significant in favor of the experimental group.

TABLE 41

DISTRIBUTION OF SCORES, MEAN, STANDARD DEVIATION, AND "t" RATIO  
FOR CHECK TEST NUMBER SEVEN, SCHOOL B

Class Limits	<u>Team Learning Classes</u>		<u>Lecture Classes</u>	
	F		F	
92 - 94	2			
89 - 91				
86 - 88	3		1	
83 - 85	7		3	
80 - 82	6		2	
77 - 79	6		2	
74 - 76	3		2	
71 - 73	2		2	
68 - 70	1		7	
65 - 67			1	
62 - 64	1		1	
59 - 61	1		3	
56 - 58			2	
53 - 55				
50 - 52			1	
47 - 49			3	
Total	32		30	
Mean	79.56		68.44	
Standard Deviation	7.02		11.06	
"t" Ratio			4.60	

An examination of the above table shows a difference of 11.08 points between means. The "t" ratio of 4.60 is statistically significant in favor of the experimental group.

TABLE 42

DISTRIBUTION OF SCORES, MEAN, STANDARD DEVIATION, AND "t" RATIO  
FOR CHECK TEST NUMBER SEVEN, SCHOOL C

Class Limits	<u>Team Learning Classes</u>		<u>Lecture Classes</u>	
	F		F	
95 - 99	1			
90 - 94	6			
85 - 89	5		1	
80 - 84	5		3	
75 - 79	6		2	
70 - 74	3		5	
65 - 69	2		6	
60 - 64	1		2	
55 - 59			2	
50 - 54			1	
45 - 49			2	
40 - 44			2	
Total	29		26	
Mean	81.68		66.98	
Standard Deviation	8.64		14.67	
"t" Ratio			4.35	

The difference between the means is 14.70 points. The "t" ratio of 4.35 is statistically significant in favor of the experimental group.

Table 43 shows the distribution of scores, mean, standard deviation, and "t" ratio for check test number eight for all schools.

TABLE 43

DISTRIBUTION OF SCORES, MEAN, STANDARD DEVIATION, AND "t" RATIO  
FOR CHECK TEST NUMBER EIGHT FOR ALL SCHOOLS

Class Limits	<u>Team Learning Classes</u>	<u>Lecture Classes</u>
	F	F
90 - 94	6	
85 - 89	14	7
80 - 84	12	7
75 - 79	26	4
70 - 74	22	15
65 - 69	9	12
60 - 64	5	14
55 - 59	4	13
50 - 54	1	5
45 - 49	1	5
40 - 44		1
35 - 39		1
30 - 34		1
Total	100	85
Mean	75.79	65.72
Standard Deviation	9.39	11.85
"t" Ratio		6.30

An examination of the above table shows a difference of 10.07 points between means. The "t" ratio of 6.30 is high and statistically significant in favor of the team learning group.

Tables 44, 45, and 46 show the distribution of scores, mean, standard deviation, and "t" ratio for check test number eight by schools.

TABLE 44

DISTRIBUTION OF SCORES, MEAN, STANDARD DEVIATION, AND "t" RATIO  
FOR CHECK TEST NUMBER EIGHT, SCHOOL A

Class Limits	<u>Team Learning Classes</u>	<u>Lecture Classes</u>
	F	F
90 - 94	1	
85 - 89	4	1
80 - 84	3	1
75 - 79	9	2
70 - 74	7	3
65 - 69	5	3
60 - 64	5	5
55 - 59	3	6
50 - 54	1	4
45 - 49	1	2
40 - 44		
35 - 39		1
30 - 34		1
Total	39	29
Mean	71.92	58.68
Standard Deviation	10.68	11.97
"t" Ratio		4.66

The difference between the means is 13.24 points. The "t" ratio of 4.66 is statistically significant in favor of the experimental group.

TABLE 45

DISTRIBUTION OF SCORES, MEAN, STANDARD DEVIATION, AND "t" RATIO  
FOR CHECK TEST NUMBER EIGHT, SCHOOL B

Class Limits	<u>Team Learning Classes</u>		<u>Lecture Classes</u>	
	F		F	
91 - 93	2			
88 - 90	3		1	
85 - 87	4		3	
82 - 84	3			
79 - 81	6		3	
76 - 78	3		1	
73 - 75	5		1	
70 - 72	4		5	
67 - 69	1		3	
64 - 66	1		1	
61 - 63			4	
58 - 60			1	
55 - 57			2	
52 - 54			1	
49 - 51			1	
46 - 48			1	
43 - 45			2	
Total	32		30	
Mean	79.32		67.28	
Standard Deviation	7.22		12.46	
"t" Ratio			4.55	

An examination of the above table shows a difference of 12.04 points between means. This difference yields a "t" ratio of 4.55, which is statistically significant in favor of the experimental group.

TABLE 46

DISTRIBUTION OF SCORES, MEAN, STANDARD DEVIATION, AND "t" RATIO  
FOR CHECK TEST NUMBER EIGHT, SCHOOL C

Class Limits	<u>Team Learning Classes</u>	<u>Lecture Classes</u>
	F	F
92 - 93	1	
90 - 91	1	
88 - 89	1	1
86 - 87	2	
84 - 85	1	1
82 - 83	1	
80 - 81	2	3
78 - 79	5	1
76 - 77	1	
74 - 75	6	1
72 - 73	1	1
70 - 71	4	4
68 - 69		2
66 - 67	2	2
64 - 65		2
62 - 63		1
60 - 61		3
58 - 59		2
56 - 57	1	1
54 - 55		1
Total	29	26
Mean	76.98	68.96
Standard Deviation	7.71	8.90
"t" Ratio		3.50

The difference between the means is 8.02 points. The "t" ratio of 3.50 is statistically significant in favor of the experimental group.

Table 47 shows the distribution of scores, mean, standard deviation, and "t" ratio for check test number nine for all schools.

TABLE 47

DISTRIBUTION OF SCORES, MEAN, STANDARD DEVIATION, AND "t" RATIO  
FOR CHECK TEST NUMBER NINE FOR ALL SCHOOLS

Class Limits	Team Learning Classes	Lecture Classes
	F	F
94 - 96	3	
91 - 93	2	
88 - 90	7	3
85 - 87	11	2
82 - 84	8	3
79 - 81	14	3
76 - 78	11	11
73 - 75	10	8
70 - 72	12	8
67 - 69	9	7
64 - 66	5	7
61 - 63	4	15
58 - 60	2	7
55 - 57	1	3
52 - 54		3
49 - 51		3
46 - 48	1	1
43 - 45		1
Total	100	85
Mean	76.67	67.96
Standard Deviation	9.26	11.06
"t" Ratio		5.69

An examination of the above table shows a difference of 8.71 points between means. The "t" ratio of 5.69 is statistically significant in favor of the team learning group.

Tables 48, 49, and 50 show the distribution of scores, mean, standard deviation, and "t" ratio for check test number nine by schools.

TABLE 48

DISTRIBUTION OF SCORES, MEAN, STANDARD DEVIATION, AND "t" RATIO FOR CHECK TEST NUMBER NINE, SCHOOL A

Class Limits	<u>Team Learning Classes</u>		<u>Lecture Classes</u>	
	F		F	
89 - 91	1			
86 - 88	1		1	
83 - 85	2			
80 - 82	4			
77 - 79	3		2	
74 - 76	3		3	
71 - 73	8		1	
68 - 70	6		4	
65 - 67	3		2	
62 - 64	4		1	
59 - 61	2		9	
56 - 58	1			
53 - 55			1	
50 - 52			1	
47 - 49	1		2	
44 - 46			1	
41 - 43			1	
Total	39		29	
Mean	69.96		63.79	
Standard Deviation	8.58		10.22	
"t" Ratio			2.34	

An examination of the above table shows a difference of 6.17 between means. The "t" ratio of 2.34, though in favor of the experimental group, is below the level of statistical significance chosen for this study.

TABLE 49

DISTRIBUTION OF SCORES, MEAN, STANDARD DEVIATION, AND "t" RATIO  
FOR CHECK TEST NUMBER NINE, SCHOOL B

Class Limits	<u>Team Learning Classes</u>		<u>Lecture Classes</u>	
	F		F	
94 - 96	2			
91 - 93	2			
88 - 90	2			
85 - 87	5		1	
82 - 84	4		2	
79 - 81	4		3	
76 - 78	5		3	
73 - 75	4		4	
70 - 72	2		2	
67 - 69	1		2	
64 - 66	1		2	
61 - 63			6	
58 - 60			3	
55 - 57			1	
52 - 54			1	
Total	32		30	
Mean	81		69.56	
Standard Deviation	7.42		9.03	
"t" Ratio			5.34	

The difference between the means is 11.44 points. This difference yields a "t" ratio of 5.34, which is statistically significant in favor of the experimental group.

TABLE 50

DISTRIBUTION OF SCORES, MEAN, STANDARD DEVIATION, AND "t" RATIO  
FOR CHECK TEST NUMBER NINE, SCHOOL C

Class Limits	Team Learning Classes	Lecture Classes
	F	F
95 - 97	1	
92 - 94		
89 - 91	3	1
86 - 88	3	1
83 - 85	5	2
80 - 82	5	
77 - 79	2	2
74 - 76	2	2
71 - 73	5	4
68 - 70	1	3
65 - 67	2	4
62 - 64		
59 - 61		3
56 - 58		2
53 - 55		
50 - 52		1
47 - 49		1
Total	29	26
Mean	79.80	69.33
Standard Deviation	7.79	10.38
"t" Ratio		4.11

An examination of the above table shows a difference of 10.47 points between means. The "t" ratio of 4.11 is statistically significant in favor of the experimental group.

Data Related to Delayed Tests

Table 51 shows the distribution of scores, mean, standard deviation, and "t" ratio for the final examination, after a lapse of one school quarter, for all schools.

TABLE 51

DISTRIBUTION OF SCORES, MEAN, STANDARD DEVIATION, AND "t" RATIO FOR THE FINAL EXAMINATION, ONE SCHOOL QUARTER LATER, FOR ALL SCHOOLS

Class Limits	Team Learning Classes		Lecture Classes	
	F		F	
87 - 89	1		1	
84 - 86	1		1	
81 - 83	6			
78 - 80	7		4	
75 - 77	3		4	
72 - 74	18		5	
69 - 71	16		7	
66 - 68	5		6	
63 - 65	4		6	
60 - 62	9		8	
57 - 59	6		8	
54 - 56	4		7	
51 - 53	5		4	
48 - 50	3		2	
45 - 47			7	
42 - 44			2	
39 - 41	1		2	
36 - 38			2	
33 - 35			1	
Total	89		77	
Mean	67.81		60.70	
Standard Deviation	9.75		11.94	
"t" Ratio		3.58		

An examination of the above table shows a difference of 7.11 points between means. The "t" ratio of 3.57 is statistically significant in favor of the team learning group.

Tables 52, 53, and 54 show the distribution of scores, mean, standard deviation, and "t" ratio for the final examination, after a lapse of one school quarter, by schools.

TABLE 52

DISTRIBUTION OF SCORES, MEAN, STANDARD DEVIATION, AND "t" RATIO FOR THE FINAL EXAMINATION, ONE SCHOOL QUARTER LATER, SCHOOL A

Class Limits	Team Learning Classes	Lecture Classes
	F	F
87 - 89	1	
84 - 86		1
81 - 83	2	
78 - 80	3	1
75 - 77	1	1
72 - 74	6	1
69 - 71	4	4
66 - 68	2	2
63 - 65	2	1
60 - 62	3	3
57 - 59	3	1
54 - 56	2	
51 - 53		
48 - 50	1	1
45 - 47		3
42 - 44		2
39 - 41		
36 - 38		1
Total	30	22
Mean	68.64	61.73
Standard Deviation	8.71	12.81
"t" Ratio		2.15

The above table shows a difference of 6.91 points between means in favor of the experimental group. The "t" ratio of 2.15, though significant at the five per cent level, is below the one per cent level chosen for this study.

TABLE 53

DISTRIBUTION OF SCORES, MEAN, STANDARD DEVIATION, AND "t" RATIO  
FOR THE FINAL EXAMINATION, ONE SCHOOL QUARTER LATER, SCHOOL B

Class Limits	Team Learning Classes		Lecture Classes	
	F		F	
85 - 89				1
80 - 84	3			1
75 - 79	2			3
70 - 74	13			2
65 - 69	5			4
60 - 64	3			3
55 - 59	1			7
50 - 54	2			2
45 - 49				4
40 - 44	1			1
35 - 39				
30 - 34				1
Total	30		29	
Mean	68.28		60.80	
Standard Deviation	8.59		12.52	
"t" Ratio			2.63	

An examination of the above table shows a difference of 7.48 points between means in favor of the experimental group. The "t" ratio of 2.63 is statistically significant at the five per cent level of confidence but below the criterion designated for this study.

TABLE 54

DISTRIBUTION OF SCORES, MEAN, STANDARD DEVIATION, AND "t" RATIO  
FOR THE FINAL EXAMINATION, ONE SCHOOL QUARTER LATER, SCHOOL C

Class Limits	<u>Team Learning Classes</u>		<u>Lecture Classes</u>	
	F		F	
84 - 86	1			
81 - 83	2			
78 - 80	3			
75 - 77			1	
72 - 74	4		2	
69 - 71	6		2	
66 - 68			1	
63 - 65	1		5	
60 - 62	3		2	
57 - 59	2		4	
54 - 56	2		3	
51 - 53	4		2	
48 - 50	1			
45 - 47			2	
42 - 44				
39 - 41				
36 - 38			2	
Total	29		26	
Mean	66.46		59.14	
Standard Deviation	10.47		9.42	
"t" Ratio			2.68	

The difference between the means is 7.23 points. The "t" ratio of 2.68 is statistically significant in favor of the team learning group.

## CHAPTER V

### SUMMARY AND CONCLUSIONS

#### Purpose of the Study

The purpose of this study was to introduce team learning to college classes in general psychology. The problem was threefold: first, to see if effective provisions for the learning needs of college students could be provided for through the method of team learning; second, to see if the achievement of those students participating in team learning would differ significantly from the achievement of those students in classes where the lecture method was employed; and third, to discover whether students would differ significantly, with reference to retention, one school quarter after participating in team learning, from those students participating in lecture classes.

#### Selection of the Population

Several colleges were approached, but finally the following schools were selected: Johnson G. Smith University, Charlotte, North Carolina; Bennett College, Greensboro, North Carolina; and the Agricultural and Technical College of North Carolina, Greensboro, North Carolina. From these schools, six sections of General Psychology were selected for the study, involving approximately 200 students in their second year of college.

### Equating the Population

In each school the students were divided into two groups. The experimental group was taught by team learning which allowed for individual progress through the study guides, mutual aid within teams and outside enriching activities accomplished in small groups. The instructor was constantly alert to clarify points, guide the teams, and keep things moving smoothly. The control group utilized the class lecture method. Rate of progress was determined by the instructor, no small group procedures were employed, and enrichment was given to the entire class.

The two groups were equated on the basis of intelligence and college grades for the previous semester. The "t" ratio technique was applied to the means and the groups showed no statistical difference on the basis of the above variables.

### Questions to Be Answered

The data were analyzed to answer the following questions:

1. Did team learning produce better results than the standard lecture procedure on the basis of the final test?
2. After a time lapse, which group had the greater power of retention?
3. Were the team learning groups superior to the lecture groups on the evaluations given at the end of each unit?

### Conclusions

1. On the final test the experimental group was superior to the control. The difference between the means was statistically significant at the one per cent level of confidence in favor of the experimental group.
2. On the test given to check retention the team learning group was superior to the control. When the "t" ratio was applied, the difference between means was not significant at the one per cent level of confidence set up for this study. It was, however, statistically significant at the five per cent level.
3. In examining the means for each of the unit tests the difference between control and experimental groups was significant at the one per cent level of confidence in favor of the experimental group in all but the following instances:
  - a. School A--Units VI and XI: Significant at the five per cent level.

### IMPLICATIONS OF THE STUDY

The results of this study have many inferences for college teaching in all areas.

Study guides and self-correcting materials would have to be prepared before the students could be released to independent group work. If this could be accomplished, much time now spent in lecture could be used profitably for discussion and clarification. There is also the

possibility for basic courses to be completed in a shorter period of time for those students who have ability.

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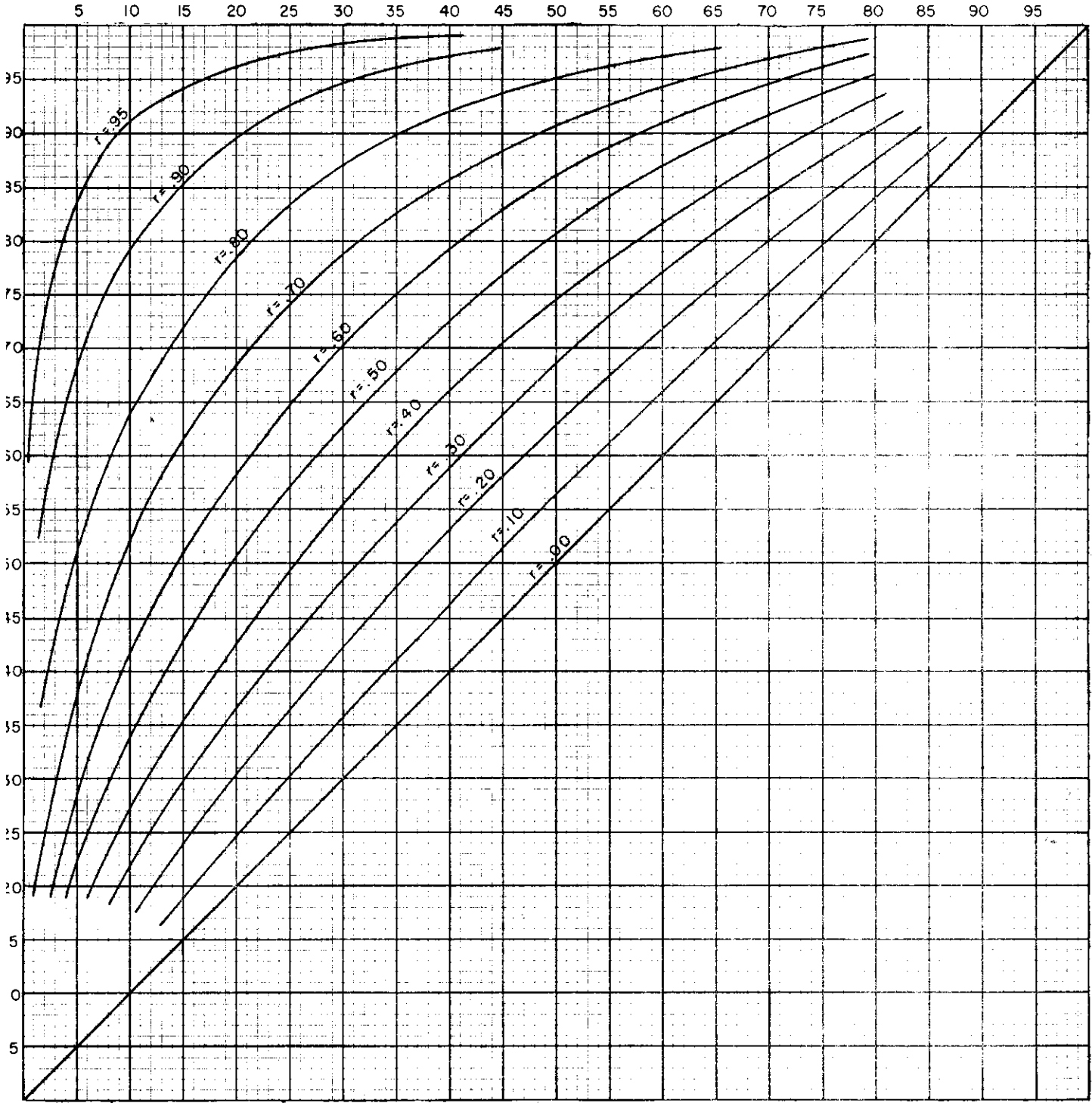
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APPENDIX A

CHART FOR COMPUTING TETRACHORIC  $r$

P<sub>1</sub> --- PERCENTAGE OF LOWER 50% PASSING THE ITEM



HART FOR COMPUTING TETRACHORIC  $r$  WITH THE CRITERION DICHOTOMIZED AT THE MEDIAN

prepared by:  
J. Casebolt, Administrative Officer, and W. T. Pace, Test Specialist  
North Carolina State Personnel Department, Division of Recruitment and Testing  
Personnel Building Annex, Raleigh, North Carolina

**APPENDIX B**

**JOB SHEET #1--TEST #1**

## INTRODUCTION TO PSYCHOLOGY

## Job Sheet #1

History of Psychology

1. Define psychology. What does it include? (References #1, #2, #3, #4, #5)
2. How is psychology related to the behavioral sciences? (References #6, #7, #8)
3. Trace the historical steps in the growth of modern psychology. (References #9, #10, #11, #12)
4. What were the viewpoints once held by the major schools of psychology? (References #13, #14, #15, #16, #17)
5. Are there schools of psychology today? Why? (Reference #18)
6. What are the important features of the experimental method? (References #19, #20, #21)
7. What are some of the limitations of experimental methods? (References #22, #23, #24, #25)
8. How can nonexperimental methods be used to advantage in psychology? (References #26, #27)
9. What is a theory? What functions does theory serve? (Reference #28)
10. What are some of the uses of psychology? (References 29, #30 #31)
11. What is clinical psychology? How is it related to psychiatry? (References #32, #33, #34)
12. In what fields are psychological test used? (Reference #35)
13. In what fields are clinical methods most used? Survey method? (References #36, #37)

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15. Ruch, op. cit., p.5.
16. Karn, op. cit., Chap 1.
17. Asher, op. cit., pp. 6-8.
18. Morgan, op. cit., p.7.
19. Karn, op. cit., pp. 23-31.
20. Ruch, op. cit., p. 20.
21. Morgan, op. cit., p. 11.
22. Ibid
23. Ruch, op. cit., p.9.
24. Karn, op. cit., pp. 18-24.
25. Asher, op. cit., pp. 10-20.
26. Morgan, op. cit., p. 16.
27. Ruch, op. cit., pp. 5-11.
28. Morgan, op. cit., p. 16.
29. Sartain, op. cit., pp 15-21.
30. Ruch, op. cit., pp. 11-28.
31. Morgan, op. cit., pp. 17-22.
32. Ibid.
33. Ruch, op. cit., pp 24-29.
34. Sartain, op. cit., p. 15.
35. Morgan, op. cit., p. 17.
36. Ibid.
37. Ruch, op. cit., pp 24-29.

INTRODUCTION TO PSYCHOLOGY  
(Evaluation)  
Job Sheet #1

History of Psychology

DIRECTIONS: Select the correct answer and place the alphabet preceding your selection on the special answer sheet.

Multiple-choice Questions

1. The behavioral sciences include the study of (a) philosophy (b) chemistry (c) economics (d) physics.
2. The behavioral science that studies primitive, illiterate cultures is (a) anthropology (b) sociology (c) ecology (d) geography.
3. Psychology is an empirical science because it (a) is systematic (b) measures things (c) has well-developed theories (d) relies on facts and observations.
4. One of the reasons psychology is a science is that (a) it studies the mind (b) it makes measurements of behavior (c) it uses speculations (d) it has many practical applications.
5. Which of the following is not always essential in science (a) research (b) theory (c) systematic facts (d) measurement.
6. Historically, opposition to scientific investigation was overcome first for one subject, then for another. Which subject is out of order? (a) physics (b) biology (c) psychology (d) chemistry.
7. In the nineteenth century, physicists and physiologists began to experiment with some problems now encompassed in psychology. Which of the following is not one of those problems? (a) laws of color (b) phenomena of hearing (c) brain functions in behavior (d) conditioned reflexes.
8. Behaviorism (a) was founded by a German psychologist (b) introduced the "thought experiment" (c) considered consciousness to be a pseudo problem (d) used a method of asking a subject to report on his sensations.
9. Gestalt psychology (a) was founded by a German psychologist (b) contends that atoms form gestalts (c) emphasized phenomena of perception and insight (d) displaced behaviorism in the United States.
10. The repetition of experiments has several scientific advantages. Which of the following is not such an advantage? (a) it makes us more certain of observations (b) it provides check-up-ability (c) it is a convenience that saves time (d) it ensures the validity of observation.
11. Experiments (a) can almost always be carried out to answer a question (b) often interfere with the thing we are trying to measure (c) are hardly ever misleading (d) give the same results in the laboratory as they do outside it.

12. A limitation of the experimental method is that (a) it is less precise than the survey method (b) experiments are artificially arranged (c) it is always better than the experimenter (d) it is too easily controlled.
13. Public-opinion polling is an example of (a) the survey method (b) the clinical method (c) the experimental method (d) the method of natural observation.
14. The largest field of specialization in psychology is (a) experimental psychology (b) social psychology (c) educational psychology (d) clinical psychology.
15. An important value of the theoretical approach is that it is (a) always correct (b) a guide for research (c) highly acceptable in the business world (d) eliminates controversy.
16. Which of the following usually has special training in research methods? (a) psychiatrist (b) clinical psychologist (c) psychoanalyst (d) social worker.
17. Psychotherapy is Not practiced by (a) the psychoanalyst (b) the guidance and counseling psychologist (c) the social worker (d) the clinical psychologist.
18. The Second World War opened up which new application of psychology to governmental problems? (a) human engineering (b) selection test (c) intelligence tests (d) survey of military.
19. Human engineering is concerned with (a) making engineers more human (b) reducing psychology to an engineering science (c) the design of equipment and tasks (d) making human tasks more interesting.
20. The science of psychology is concerned with the study of (a) overt behavior (b) overt and implicit behavior (c) conscious and unconscious events (d) all of these.
21. In order to study the motivation of individuals in a work situation, the psychologist would most likely employ (a) psychological marketing techniques (b) methods of engineering (c) physiological techniques (d) attitude measurement.
22. One of the first requirements for achieving a scientific understanding of behavior is (a) a statement of an adequate theory of behavior (b) an objective understanding of behavioral events (c) some degree of prediction of behavior (d) all of these.
23. A psychologist who analyzed experience in terms of sensations, images, and feelings would be using (a) psychoanalysis (b) functionalism (c) introspectionism (d) none of these.
24. One of the major criticisms of introspectionism and behaviorism in psychology was that both were too atomistic. An approach which represents quite an opposite point of view is (a) functional psychology (b) psychoanalysis (c) gestalt psychology (d) all of these.

25. Psychology is best defined as the study of (a) the mind (b) human nature (c) Human behavior (d) the behavior of small groups of people.
26. "Arm-chair" Theorizing (a) depends upon logic unaided by observation (b) lacks logic (c) leads to useless experimentation (d) fails to come to "common-sense" conclusions.
27. Another name for "arm-chair theorizing is (a) phrenology (b) control of variables (c) a Priori reasoning (d) human engineering.
28. What is the chief limitation of the "arm-chair" method of getting knowledge? ((a) the lack of ability of people who use it (b) control of variables (c) failure to question assumptions (d) the relative ease of drawing conclusions with it.
29. The two branches of anthropology are (a) psychological and social (b) experimental and naturalistic (c) biological and physical (d) physical and cultural.
30. The principal difference between anthropology and sociology is that anthropology (a) studies groups of people (b) is not scientific (c) concerns itself with human behavior (d) studies various people and their cultures.
31. Science can say nothing about statements which are (a) organized (b) unverifiable (c) unverified (d) inaccurate.
32. The major impact which behaviorism has had upon psychology is (a) its rejection of consciousness (b) its limitation of thinking to subvocal speech (c) its emphasis upon environmentalism (d) it stree upon objectivity.
33. Such similarity as exists between physics, physiology, and psychology lies chiefly in their (a) common subject matter (b) reliance on a realistic philosophy (c) complexity (d) methods of observation.
34. An experiment always involves (a) a laboratory (b) controlled conditions (c) mathematical analysis (d) measurement
35. Which of these is not a school of psychology? (a) behaviorism (b) Gestaltism (c) Phrenology (d) functionalism.
36. Before the establishment of the first psychological laboratory in 1879, the subject matter of psychology was studied predominantly by (a) physiologists and philosophers (b) phrenologists and psychoanalysts (c) behaviorist and functionalists (d) physicists and strutualists
37. The chief function of science is (a) making quantitative measurements (b) making objective and unbiased interpretation of data (c) developing hypotheses (d) studying natural phenmena.
38. The experimental method in psychology is useful because it provides (a) an opportunity to make use of apparatus (b) data which can be handled mathematically (c) a means of controlling conditions (d) a means of explaining human behavior.

39. The data of Psychology (a) are always quantitative (b) must be consistent with the data of all the other sciences (c) are attempt to interpret life in a fashion that will satisfy the psychologist belief as to what man's life is (d) are independent of all other sciences.
40. When you think about the long hours you spent studying last night, you are using the method of (a) objective observation (b) prediction (c) a case history (d) introspection.
41. Two theories concerning the same phenomenon may be entirely different and yet not be in conflict with one another provided that (a) the basic assumptions are different (b) the men advancing the theories are friends (c) the theories are not scientific (d) the facts observed are the same.
42. When the psychologist is interested in conscious experience, he uses which one of the following methods? (a) genetic (b) behavioral (c) introspection (d) clinical
43. The independent variable in most psychological experiments is the (a) organism (b) response (c) experimenter (d) stimulus
44. Which of the following procedures is followed to discover whether the most obvious factor is the prime determiner of a phenomenon? (a) control (b) observation (c) statistical interpretation (d) recapitulation.
45. One of Freud's most important contribution to modern psychology was his emphasis on (a) field theory (b) the role of the environment in the development of personality (c) unconscious processes (d) retroactive inhibition.
46. Contemporary psychoanalysts have in general placed less emphasis than Freud on (a) instincts and biological influences (b) social and cultural influences (c) unconscious processes (d) motivation.
47. The "ism" most characteristic of the point of view of modern American psychologists is (a) structuralism (b) functionalism (c) behaviorism (d) none of these.
48. The functionalist places great emphasis on (a) introspection (b) unconscious motivation (c) total pattern of activity (d) theory construction.
49. Which of these is a miniature system? (a) psychoanalysis (b) Hull's theory of rote learning (c) the stimulus error (d) animal psychology.
50. George P. Longwind of Hard Rock College recently published an article entitled "The Effects of Loud Noises on Student Attention in Introductory Psychology Classes." In this research the loud noises would be the (a) dependent variable (b) only important variable (c) independent variable (d) only variable which is not under control.

Matching Questions

Directions: Match Column B with Column A and place the number of your answer on the special answer sheet.

Column A

51. Experimental method
52. Empirical method
53. Survey method
54. Clinical method
55. Theoretical method
  
56. Wilhelm Wundt
57. William James
58. John Dewey
59. John B. Watson
60. Sigmund Freud
  
61. Behaviorism
62. Introspectionism
63. Functionalism
64. Gestalt Psychology
65. Psychoanalysis
  
66. First laboratory of psychology
67. Beginning of Behaviorism
68. First psychological clinic
69. Psychoanalysis
70. First laboratory of psychology in America

Column B

1. Appealing to established authorities
2. Constructing models or maps
3. Asking questions of a representative sample of the population
4. Seeking truth by observation rather than through argument
5. Being practical about things
6. Obtaining observations in the course of handling individual problems
7. Designing observations so that they are repeatable and include control.
  
1. University of Leipzig
2. John Hopkins University
3. Harvard University
4. Functionalism
5. Psychoanalysis
6. Behaviorism
7. Gestalt Psychology
  
1. Treatment of mental illness
2. Sensation
3. Brain functions
4. configurations
5. Survey method
6. Reflexes
7. Everything a person does
  
1. John Hopkins University
2. University of Leipzig
3. University of Pennsylvania
4. John B. Watson
5. Sigmund Freud
6. Harvard University
7. Boston University

Column A

71. Behaviorism
72. Functionalism
73. Gestalt
74. Structuralism
75. Psychoanalysis

Column B

1. Animal processes
2. unconscious processes
3. perceptual organization
4. anti-introspectionism
5. trained introspection
6. clinical investigation
7. dependent variables

True-false Questions

Directions: If the statement is true, write the letter "T" in the space provided on the answer sheet; if the statement is false, write the letter "F" in the space provided on the answer sheet.

76. Most people feel they know all they need to know for understanding other people.
77. Psychology is the science of the mind.
78. Animals are so different from people that it does not pay to spend much time studying them.
79. Inference about the mind, thoughts, and feelings can be made from behavior.
80. Behavior is the only aspect of a person's psychological activity that is observable.
81. Zoologists have aided the psychologist in his efforts to understand animal behavior.
82. Facts, though essential to science, are by themselves of little use.
83. Most problems of measurement in psychology are questions of "more than" or "less than."
84. An important feature of scientific method is complete faith in authority.
85. Before psychology became a science, it was part of the study of philosophy.
86. Experimental laboratories of psychology began to flourish shortly after 1900.
87. Consciousness is a phenomenon that is well understood today.
88. Functionalists contended that psychologists should be interested in everything a person does.
89. There is always room in science for rigorous speculation.

90. Gestalt psychologists were regarded by behaviorist as being too "atomistic."
91. A placebo is a pill containing a drug used in an experiment.
92. The independent variable is a variable an experimenter can vary at will.
93. It is hardly possible to experiment with what makes a happy marriage.
94. A subject in a psychological experiment should be told in advance what its purpose is.
95. Sigmund Freud discovered that dreams often reflect strong desires.
96. Theory is a guide for research.
97. Social psychology is the largest field of specialization in psychology today.
98. Counseling psychology is a rapidly expanding field.
99. A marriage is most likely to be happy when the man is considerably more passionate than his wife.
100. Government leaders do not think much of polling techniques.

APPENDIX C

JOB SHEET #2--TEST #2

## INTRODUCTION TO PSYCHOLOGY

## Job Sheet #2

Growth and Development

1. Why are there 24 pair of chromosomes in each cell in the human body yet only 24 single chromosomes in the sperm or the egg? (Reference 1, 2, 3, 4, and 5)
2. Are there any questions as to the exact number of chromosomes? If so, what are some of the studies that led to these questions? (Reference 6)
3. What determines whether a baby is a boy or girl? (Reference 7, 8, 9, and 10)
4. If one parent has brown eyes and one has blue eyes, why may a child's eyes be blue? brown? (Reference 11, 12)
5. What do we learn by comparing the development of identical twins? (Reference 13 and 14)
6. How long does maturation go on? Which pattern of behavior develop early and which appear later? Why are some pattern slow to appear? (Reference 15, 16, and 17)
7. How has maturation been demonstrated in birds and salamanders? (References 15, 16, and 17)
8. What is the effect of restricting an infant's movement? (References 20 and 21)
9. Does special training hasten maturation? Upon what evidence is your answer based (Reference 22)
10. What are the orders of skills? At what ages do these orders usually appear? (Reference 23)
11. Name and locate the glands of the endocrine system. What are the functions of these glands? (Reference 24, 25, and 26)
12. Trace the stages in an infant's acquisition of language. (Reference 27, and 28)
13. If you were asked to guess whether a child would be a fast or slow in learning to talk, what information about the child and its family would you need to make the best-informed guess? (Reference 29)

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References Con't

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INTRODUCTION TO PSYCHOLOGY  
(Evaluation)  
Job Sheet #2

Growth and Development

DIRECTIONS: Select the correct answer and place the answer on the special answer sheet.

Multiple-choice Questions:

1. The period of the embryo ends how long after conception? (a) 24 hours (b) 2 weeks (c) 2 months (d) 7 months.
2. Nine days after conception, the human individual consists of (a) one cell (b) a ball of identical cells (c) many differentiated cells (d) a ball having three layers.
3. A sperm contains (a) 24 chromosomes (b) 48 chromosomes (c) 48 pairs of chromosomes (d) millions of chromosomes.
4. Chromosomes are (a) small threadlike particles (b) beads on a string (c) found in pairs in all cells (d) 24 in number in all animals.
5. Chromosomes (a) have never been seen (b) are smaller than genes (c) always are found in pairs (d) none of these.
6. Genes (a) are the basic units of heredity (b) are complex chemical packets (c) direct the formation of every part of the body (d) all of these.
7. Heredity is determined by the part of the chromosome called the (a) cytoplasm (b) gene (c) nucleus (d) enzyme.
8. X chromosomes differ from Y chromosomes in that X chromosomes (a) are larger (b) are smaller (c) determine sex (d) none of these.
9. An egg fertilized (a) by an X sperm produces a girl (b) by a Y sperm produces a boy (c) both of these (d) none of these.
10. To be color-blind, a man must receive a gene for color blindness (a) from his mother (b) from his father (c) from both his mother (d) from his grandfather.
11. Which of the following is a sex-linked characteristic? (a) color-blindness (b) baldness (c) hemophilia (d) all of these.
12. Fraternal twins (a) have the same heredity (b) develop from one egg (c) have a common fetal sack (d) have heredities as similar as those of brother and sister.
13. Identical twins are the result of (a) the simultaneous fertilization of two eggs (b) the fertilization of one egg by two sperm (c) the splitting of the fertilized egg (d) none of these.
14. Identical twins result from the fertilization of (a) one egg by one sperm (b) two eggs by one sperm (c) one egg by two sperm (d) two eggs by two sperm.

5. Fraternal twins are about as much alike in their heredity as (a) parent and child (b) identical twins (c) brother and/or sister (d) cousins.
6. The first stage in the development of the sensory-motor arc is one in which (a) sense organs connect with the nervous system (b) the nervous system sends down nerves to the muscles (c) the sense organs, nervous system and muscles develop separately with no connection between them (d) none of these.
7. At birth, the human cerebral cortex (a) is not functioning (b) is not mature (c) has two years to go before it will be largely matured (d) all of these.
8. Maturation (a) follows behavior (b) precedes behavior (c) is concurrent with behavior (d) has nothing to do with behavior.
9. The best example of incomplete development at birth is (a) the spinal cord (b) the medulla (c) the cerebral cortex (d) the muscles.
10. The behavior which appears first in the prenatal organism is (a) the sucking reflex (b) breathing movements (c) response to sounds (d) walking movements.
11. Physical maturation is relatively the same in most individuals in respect to its (a) speed (b) order (c) completion (d) all of these.
12. The organs of the body that are slowest to develop are (a) nervous system and endocrine glands (b) heart and lungs (c) muscles and digestive tract (d) lymphatic and circulatory systems.
13. Swimming in the salamander is an example of (a) pure maturation (b) imprinting (c) learning (d) specialized training.
14. Salamanders kept in chloroform until they normally swim, then returned to pure water, (a) must have considerable practice before they learn to swim (b) swim normally in about a half hour (c) never swim again (d) immediately swim normally.
15. Examples of an endocrine gland are (a) the sex glands (b) the thyroid gland (c) the pancreas (d) all of these.
16. Chicks kept in the dark for 5 days after hatching and tested on pecking (a) failed to peck accurately about 25 per cent of the time (b) were practically perfect (c) made more errors than newly hatched chicks (d) needed a little practice to become perfect.
17. The practice of bundling babies, used by the American Indian, has resulted in (a) the Indian's preference of riding over walking (b) a delay in the
18. Apes reared in darkness (a) have normal visual perception (b) require considerable training before they can discriminate different visual patterns (c) have normal eyes (d) none of these.
19. The girl hidden from outside social contact by her deaf-mute mother until she was six years of age (a) could not speak (b) learned many words in 2 months (c) did as well in 2 months as do typical three year old children (d) all of these.

30. Johnny and Jimmy developed at about the same rate in (a) walking (b) special activities (c) climbing down from a pedestal (d) none of these.
31. In the co-twin control studies (a) experience is held constant (b) heredity is held constant (c) fraternal twins are separated to investigate environmental differences (d) identical twins are given exactly the same training opportunities.
32. The important point in the experiment on the ape and the child is that (a) they developed according to their hereditary potentials (b) they developed at the same rate (c) the child eventually caught up to the ape in all respects (d) the ape never was as good as the child.
33. In attempts to teach apes human speech (a) no success has been achieved (b) two or three words have been mastered (c) several words have been mastered (d) apes never used words meaningfully.
34. Special training of bright and dull college students resulted in (a) the dull group surpassing the bright group (b) the equalization of the dull with the bright group (c) the amplification of the differences between the two groups (d) none of these.
35. We may conclude from studies of maturation and learning that (a) maturation determines the rate and limit of mental development (b) it is useless to "push" a child faster than his schedule of maturation permits (c) the fullest development of an individual depends upon learning (d) all of these.
36. Being able to balance in an upright position with support is (a) a first-order skill (b) a second-order skill, (c) a third-order skill (d) a fourth-order skill.
37. The child of six months typically has just learned to (a) sit with support (b) sit on a high chair (c) stand with help (d) creep.
38. Norms for motor development (a) are possible because there is a pattern to development (b) are averages (c) have little to do with intelligence (d) all of these.
39. The grasping of objects (a) develops before sweeping movements (b) is called prehension (c) is possible only in apes and human beings (d) develops about the third or fourth month.
40. The use of the thumb and the tips of the fingers to grasp an object appears at about (a) 22 weeks (b) 30 weeks (c) 46 weeks (d) 52 weeks.
41. By the age of ten months, a child typically (a) can respond adequately to commands (b) can wave bye-bye (c) can quickly associate a word with an object (d) all of these.
42. In the acquisition of vocabulary (a) verbs come first (b) adjectives come before nouns (c) nouns come before pronouns (d) pronouns come before adverbs.
43. Probably the most important factor in the superior rate of learning language in well-to-do families is (a) a stimulating environment (b) intelligence (c) the greater age of the parents (d) the better education of the parents.

44. Which factor favors the early development of language? (a) biligualism  
(b) high intelligence (c) being a boy (d) being a twin.

### Matching Questions

DIRECTIONS: Match Column B with Column A and place the number of your answer on the special answer sheet.

- | Column A   | Column B                                   |
|--|--|
| 5. body-limb coordination in prone position      | 1. 3-19 weeks                              |
| 6. unsupported locomotion in upright position    | 2. 20-24 weeks                             |
| 7. control of neck muscles                       | 3. 35-31 weeks                             |
| 8. balance with support in upright position      | 4. 32-36 weeks                             |
| 9. control of trunk and upper-limb muscles       | 5. 37-40 weeks                             |
| 0. zygote  | 6. 42-47 weeks                             |
| 1. fetus   | 7. 62-64 weeks                             |
| 2. sperm   | 1. differentiated cells                    |
| 3. egg   | 2. undifferentiated cells                  |
| 4. embryo  | 3. contains single X chromosome            |
| 5. hybrid  | 4. contains single X or Y chromosome       |
| 6. can be dominant or recessive                  | 5. Single cell with 24 pairs of chromosome |
| 7. carry sex linked characteristics              | 6. unit of inheritance                     |
| 8. develop from one egg                          | 7. final prenatal stage                    |
| 9. differ from each other mainly due to heredity | 8. genes from 2 pure strains               |
| 0. are color blind 8% of the time                | 1. identical twins                         |
|  | 2. genes                                   |
|  | 3. fraternal twins                         |
|  | 4. X chromosomes                           |
|  | 5. females                                 |
|  | 6. Y chromosomes                           |
|  | 7. males                                   |

### Column A

### Column B

- |           |                      |
|-----------|----------------------|
| 2 months  | 1. sit with support  |
| 4 months  | 2. creep             |
| 6 months  | 3. pull to stand     |
| 8 months  | 4. chest up          |
| 10 months | 5. stand with help   |
|           | 6. climb stairs      |
|           | 7. sit on high chair |

- |                  |                                |
|------------------|--------------------------------|
| 56. 4-6 months   | 1. makes different sounds      |
|                  | 2. talks to self               |
| 57. 6-9 months   | 3. babbles                     |
|                  | 4. imitates sounds             |
| 58. 9-12 months  | 5. understands gestures        |
|                  | 6. understands simple commands |
| 59. 11-15 months | 7. says three or more words    |
| 70. 13-18 months |                                |

Use each number as often as necessary

- |                      |             |
|----------------------|-------------|
| 71. muscles          | 1. ectoderm |
|                      | 2. mesoderm |
| 72. nervous system   | 3. endoderm |
| 73. sense organs     |             |
| 74. blood            |             |
| 75. digestive system |             |
| 76. skin             |             |
| 77. bone             |             |

Directions: If the statement is true, write the letter "t" in the space provided on the answer sheet; if the answer is false, write the letter "f" in the space provided on the answer sheet.

True-False Questions

78. The fertilized egg travels down a tube to the mother's uterus before it undergoes any cell division.
79. The 24 pairs of chromosomes in the fertilized human egg are the result of the fusion of 12 single chromosomes in the unfertilized egg with 12 single chromosomes in the fertilized human egg are the result of the fusion of 12 single chromosomes from the sperm.
80. All cells of the human body, except the sperm and egg, have 24 pairs of chromosomes.
81. Chromosomes are the basic unit of heredity.
82. Genes carry on them a large number of chromosomes.
83. Every cell in the human body has 24 pairs of chromosomes.
84. Genes always work in pairs.
85. If a person has brown eyes, he has no recessive gene for blue eyes.
86. Color blindness is carried on the X chromosomes.

87. Sex-linked characteristics are concerned with the development of the sexual organs.
88. Color blindness is an example of sex-linked characteristics.
89. The color-blindness gene appears on the X chromosome, and this fact explains why very few females are color-blind.
90. Color blindness appears equally often in males and females.
91. When a man is color-blind, it is because of a defective gene contributed by his mother.
92. Any differences in identical twins must be due to environment.
93. Genes are related to body structure, but not to any psychological characteristics.
94. Recent studies show that heredity has nothing to do with psychological characteristics.
95. Identical twins have exactly the same heredity.
96. The heredity of fraternal twins is no more similar than that of brothers and sisters.
97. Fraternal twins are produced from one egg and two sperm.
98. Any psychological differences between identical twins are due to training or environmental influences.
99. In the strict sense of the word, all maturation is a physical phenomenon.
100. Heredity governs developmental processes.

**APPENDIX D**

**JOB SHEET #3--TEST #3**

## INTRODUCTION TO PSYCHOLOGY

## Job Sheet #3

Motivation and Emotion

1. List the major motives and give examples of each. (References #1, #2, #3, #4, #5, #6, #7)
2. What is Homeostasis? (Reference #8, #9 #10, #11, #12, #13, #14)
3. Occasionally a person is discovered who has no pain receptors. Can you imagine the ways in which such a person's life is different from the normal person?
4. Must an infant learn what foods it should eat to grow normally? Why do some individuals select an improper diet? (Reference #15)
5. What organs secrete sex hormones? Are sex hormones necessary for sexual motivation in animals and human beings? (References #16, #17, #18, #19 # 20\*)
6. List in order of their complexity four important kinds of instrumental behavior. What is instrumental learning? (Reference #21, #22)
7. Can you think of five combinations of primary and secondary goals? (References #23, #24, #25, #26, #27, #28, #29, #30)
8. In observing the actions of animals and peoples, how, generally speaking, do we determine the needs that motivate them? (Reference #33, #34, #35, #36, #37)
9. Are human beings "instinctively" competitive? What, in general, determines whether they compete or cooperate? Present evidence. (References #40, #41, #42)
10. What are the principal factors that indicate that emotional development is partly a process of maturation? (References #43, # 44, #45, #46)
11. How may fear be acquired? Describe a specific situation. (References #47, #48, #49, #50.)
12. Name the four aspects of emotion (Reference #52)
13. List five typical bodily changes that occur at times of extreme emotion. (Reference #53, #54)
14. Why is the autonomic nervous system important in emotional expression? (References #55-#62)
15. How does the lie detector work? Why, do you suppose, courts of law have been reluctant to accept lie-detector reports as evidence in trial proceedings? (References #63-#68)

16. What in general are the situations that evoke fear? anger? pleasure?  
(Reference #69, #70, #71, #72, #73)
17. What is the difference between anxiety and a phobia? (Reference #74)
18. How are frustration, aggression, and anxiety related to one another?  
(Reference #75)

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INTRODUCTION TO PSYCHOLOGY  
( Evaluation )  
Job Sheet #3

Motivation and Emotion

DIRECTIONS: Select the correct answer and place the answer on the special answer sheet.

1. When a need has been satisfied, the organism exhibits (a) striving (b) an internal imbalance (c) relief (d) instrumental behavior.
2. A lack or deficit within the individual is (a) homeostasis (b) a goal (c) a need (d) an instinct.
3. The cycle of biological motivation usually starts with (a) consummatory behavior (b) bodily lack of deficit (c) goal-directed activity (d) instrumental behavior.
4. The sequence hunger: bar pressing: food refers to (a) experiments in classical conditioning (b) the motivational cycle (c) frustration of drive (d) secondary goals.
5. Physiological needs are (a) derived and learned (b) basic and innate (c) basic and learned (d) none of these.
6. The boy with the adonormal adrenal gland died because (a) he could not get enough salt (b) he ate too much salt (c) he hated sweet things (d) none of these.
7. An example of homeostasis is (a) a body temperature of 101 degrees F. (b) high CO<sub>2</sub> level in the blood immediately after exercise (c) maintenance of body mineral content (d) all of these.
8. Warmth, cold, and pain (a) are separate senses (b) are physiological drives (c) have similar physiological mechanism (d) all of these.
9. Pain (a) has receptors known as free nerve ending (b) gives rise to general, unspecific responses (c) has physiological mechanisms unlike those for warmth and cold (d) all of these.
10. It is thought that the mechanism for thirst is (a) dryness at the back of the mouth (b) water in the stomach (c) deficit of water in cells of the thirst center (d) loss of salt.
11. The most important factor in thirst is (a) dehydration of body cells (b) the contents of the stomach (c) dryness of the mouth and throat (d) none of these.
12. Immediately after placing water in the stomach of a fistulated dog, the animal (a) continues to drink (b) drinks more slowly (c) cease to drink (d) is nauseated by water.

- Eating behavior is controlled by (a) stomach contractions (b) hunger pangs (c) one hypothalamic center (d) two hypothalamic centers.
- Hunger seems to be due to chemical conditions in the blood because (a) hunger pangs and reports of hunger are associated (b) people without stomachs feel hunger (c) chemical changes associated with hunger have been demonstrated (d) all of these.
- The child most likely to select a balance diet in the cafeteria-feeding situation is the one which is (a) ten years old (b) four years old (c) two years old (d) eight months old.
- In experiments on specific hungers in rats (a) a majority of the rats failed to select beneficial diets (b) all of the rats selected balanced diets (c) about two-thirds of the rats grew as well as, or better than, rats fed on stock diets (d) many rats failed to eat enough fat.
- An essential for proper dietary selection in the cafeteria-feeding situation is (a) that the subject be a sensible adult (b) that the subject be able to push a lever (c) that the subject be an animal (d) that the subject be a naive organism.
- In rats whose parathyroid glands have been removed, there is (a) a preference for salt (b) an increase hunger for potassium (c) an aversion to phosphorus (d) an aversion to calcium.
- Observations of two-headed babies have shown that sleep is controlled by (a) the central nervous system (b) the blood balance (c) fatigue products in the blood (d) the amount of exercise.
- The young man who was required to punch a clock every 10 minutes for 7 days (a) never slept until the experiment ended (b) seldom missed punching the clock (c) was still in good mental condition at the end of the experiment (d) believed that his clock was being tampered with.
- Studies of Siamese twins lead to the conclusion that (a) sleep is due to chemical factors in the blood (b) they sleep and stay awake at the same time (c) sleep is controlled by centers in the brain (d) the physiological conditions causing sleep are well understood.
- The maturation of the sex glands (a) occurs at puberty (b) is correlated with the appearance of sexual interests (c) determines the appearance of secondary sex characteristics (d) all of these.
- Homosexuality (a) occurs because an individual has the wrong sex hormones (b) may be increased by administering sex hormones (c) is due to high sexual motivation (d) none of these.
- In lower animals, sexual behavior is most dependent upon (a) habit (b) previous experience (c) sex hormones (d) season of the year.
- Females of which species show sexual motivation when the supply of hormones is very low? (a) monkeys (b) chimpanzees (c) human beings (d) all of these.

- The newborn infant displays (a) excitement (b) many different emotions (c) a few, specific emotions (d) no emotion except crying.
- At three months of age, infants display (a) fear and pleasure (b) anger and love (c) distress and delight (d) anger and pleasure.
- The single emotion which is present in an infant for the first few weeks is (a) anger (b) fear (c) excitement (d) pleasure.
- Development of emotion in the infant depends (a) primarily on maturation (b) primarily on learning (c) first on maturation and later on learning (d) first on learning and later on maturation.
- Albert was conditioned to fear (a) a white rat (b) a rabbit (c) white furry objects (d) loud noises.
- Emotion is (a) a stirred-up bodily state (b) a pattern of expression (c) a motive (d) all of these.
- In strong emotion, the division of the autonomic system which predominates is the (a) parasympathetic (b) sympathetic (c) paraautonomic (d) nonsympathetic.
- The most common symptom in fear, as observed in combat flying is (a) a pounding heart and rapid pulse (b) feeling weak or faint (c) feeling sick to the stomach (d) trembling.
- The action of adrenalin affects in what way the action of the sympathetic system? (a) counteracts (b) mimics (c) initiates (d) none of these.
- Adrenalin (a) has an effect similar to the sympathetic system (b) increases heart rate and blood pressure (c) increases muscular circulation (d) all of these.
- The galvanic skin response is primarily a measure of (a) skin temperature (b) emotional states (c) voluntary muscle response (d) none of these.
- Activity of the parasympathetic system (a) speeds up the heart (b) causes secretion of adrenalin (c) mobilizes sugar from the liver (d) is more active than the sympathetic system when one is calm and relaxed.
- The lie detector makes use of such changes in sympathetic responses as (a) heart rate (b) salivation rate (c) brain waves (d) muscle tension.
- The lie detector (a) may not discriminate between "critical" and "neutral" stimuli (b) may indicate emotion in innocent people (c) is a valuable instrument in the hands of an expert (d) all of these.
- Bodily changes are easily distinguished between (a) mild and severe emotional states (b) fear and anger (c) fear and anxiety (d) any intense emotional states.
- The startle response consists of a sequence of events. Which of the following is out of its proper order? (a) thrusting forward of head and neck (b) rapid closing of eyes (c) widening the mouth (d) bulging of neck muscles.

- Looking only at facial expressions of emotion can best distinguish (a) surprise from fear (b) anger from fear (c) pleasant from unpleasant emotions (d) sorrow from anger.
- Among the Chinese, disappointment may be expressed by (a) sticking out the tongue (b) clapping the hands (c) scratching the ear (d) stamping the feet.
- What one needs to know to judge emotion most correctly is (a) facial and vocal expression (b) posture and gestures (c) the emotional situation (d) all of these.
- The typical cause of fear in the adult is (a) threats to satisfaction (b) strange situations (c) aggression (d) all of these.
- In both young and adult human beings, the typical cause of anger is (a) frustration (b) aggression (c) anxiety (d) do's and don't's.
- The basic situation giving rise to anger is (a) being threatened (b) some kind of frustration (c) need satisfaction (d) all of these.
- In the child pleasure is observed when (a) he is physically comfortable (b) situations are novel, but not frightening (c) he exercises a new skill (d) all of these.
- The element in laughter-provoking situations most clearly recognized as important is congruity (b) pathos (c) novelty (d) aggression.
- Which of the following is behavioral evidence of emotional experience? (a) preferences (b) subjective reports (c) humor (d) introspection.

• Directions: In the ( ) in front of the number of the test item on your answer sheet write the letter of the best term.

A	B
at birth	1. disgust
0-3 months	2. distress
3-6 months	3. jealousy
6-9 months	4. affection for children
9-12 months	5. affection for adults
	6. excitement
	7. elation
anger	1. need satisfaction
fear	2. maternal instinct
aggression	3. strange stimulus
pleasure	4. insecurity or motivational conflict
laughter	5. restraint
	6. incongruous situation
	7. frustration

AB

1. functional autonomy
2. repression
3. value
4. prolactin
5. prestige

1. maternal behavior
2. unconscious motives
3. affiliative need
4. G. W. Allport
5. learned goal
6. status need
7. dependency

6. pain avoidance

1. physiological goal
2. physiological need

7. level pushing

3. social value
4. instinctive behavior
5. instrumental behavior
6. learned need

8. companionship

7. biochemical homeostatic mechanism

9. sexual morality

0. sexual partner

1. folkways

1. transmitter of values

2. mores

2. superstition

3. institutionsl ways

3. acquired fear

4. taboos

4. sex customs.

5. language

5. incest

6. laws

7. little social courtesies

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II. Directions: In the ( ) in front of the number of the item on your answer sheets, print "T" if the statement is true and "F" if it is false.

1. Motivation is instigated by goals.

2. The term "incentive" implies a certain control over motivated behavior.

3. The boy with abnormal adrenal glands had an imaginary craving for salt.

4. Goals for physiological needs are relatively fixed and unchangeable.

5. Shivering is an example of an homeostatic mechanism.

6. The term "homeostasis" means motivated behavior.

7. A hypothalamic center probably responds directly to the temperature of the blood circulating through it.

- . A sudden pain in a limb causes general squirming.
- . The best explanation of thirst is that it is due to dryness of the throat.
- . A dog with an opening in the esophagus so that no water reaches its stomach will drink hours without stopping.
- . Lack of water in some cells of the hypothalamus probably regulates drinking behavior.
- . Stomachless persons do not feel hunger.
- . Walter B. Cannon showed that stomach contractions and the experience of hunger are usually associated.
- . Human beings develop different emotional patterns strictly through learning.
- . Early emotional development proceeds according to a maturational schedule.
- . Emotional development proceeds to completion without requiring much learning.
- . The most common symptom of fear in combat flying was pounding of the heart and rapid pulse.
- . The parasympathetic system speeds up the heart and raises blood pressure.
- . Adrenalin is the hormone of the kidneys.
- . The galvanic skin response is a sensitive indicator of emotion.
- . The lie detector is used on assumption that a person who commits a crime has emotional responses to certain critical stimuli.
- . One difficulty with the lie detector is that both neutral and critical stimuli may evoke an emotional response.
- . The startle pattern is one of the least consistent of emotional patterns.
- . It is easy to distinguish the bodily states involved in fear and anger.
- . Emotional patterns, other than the startle pattern, are rather consistent from person to person

**APPENDIX E**

**JOB SHEET #4--TEST #4**

INTRODUCTION TO PSYCHOLOGY  
Job Sheet #4

Learning and Thinking

1. What is learning? (References #1, #2, #3, #4, #5, #6, #7, #8)
2. Distinguish among classical conditioning, instrumental learning, and perceptual learning. (References #9, #10, #11, #12, #13, #14)
3. What is meant by stimulus generalization? Give an experimental example. (References #16, #17, #18, #19, #20, #21, #22, #23, #24)
4. What is extinction? How is it produced in classical conditioning and instrumental learning? (References #25, #26, #27, #28, #29, #30, #31, #32, #33)
5. Distinguish between primary reinforcement and secondary reinforcement. (References #34, #35, #36, #37, #38, #39, #40)
6. Define partial reinforcement. How does it affect extinction? (References #42, #43, #44, #45, #46)
7. When would you recommend the use of punishment and when would you not? (References #47, #48, #49, #50, #51, #52, #53)
8. Distinguish between discriminative learning and incidental learning. (References #54, #55, #56, #57, #58)
9. Why does learning sometimes reach a plateau? (References #59, #60, #61, #62, #63, #64)
10. What general rule can be stated about the distribution of practice in learning? (References #65, #66, #67, #68)
11. Does learning progress faster by reading than by spending time reciting/ By listening than by reading? (Reference #69)
12. What is meant by transfer of training? How is it related to stimulus generalization? (References #70, #71, #72, #73, #74, #75, #76, #77,)
13. How can retention be measured? (References #78, #79, #80, #81, #82, #83, #84, #85)
14. How is remembering and forgetting related? (References #86, #87, #88, #89, #90, #91, #92, #93)
15. How can one experiment with images? What do such experiments show? (References #94, #95, #96, #97, #98, #99, #100)
16. What is eidetic imagey? Who has it? (References #101, #102, #103, #104, #105, #106, #107)
17. What is implicit response? How has it been demonstrated? (Reference #108, #109, #110, #111, #112, #113)

18. Define symbolic processes. Describe experiments in which they have been studied. (References #114, #115, #116, #117, #118, #119, #120, #121)
19. Can animals learn concepts? What are the easiest concepts for children to learn? (References #122, #123, #124, #125, #126, #127, #128, #129)
20. What kind of motives are involved in problem solving? (References #130, #131, #132, #133, #134, #135, #136, #137)
21. What, in essence, is reasoning? Cite an experiment that illustrates it. (References #138, #139, #140, #141)

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105. Williams, op. cit., pp. 328-329. (Note: Read story to understand eidetic imagey.)
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INTRODUCTION TO PSYCHOLOGY  
(Evaluation)  
Job Sheet #4

Learning and Thinking

DIRECTIONS: Select the correct answer and place the answer on the special answer sheet.

Multiple-Choice

1. The principle of reinforcement implies that (a) responses are acquired only if they are reinforced (b) without reinforcement, responses decline and are extinguished (c) reinforcement is essential to learning (d) all of these.
2. A conditioned response is acquired (a) presenting the unconditioned stimulus alone for several trials (b) pairing the unconditioned stimulus and conditioning stimulus (c) pairing the unconditioned stimulus and unconditioned response (d) presenting the conditioning stimulus alone for several trials.
3. The simplest kind of learning in the higher animals (such as mammals) is called (a) conditioning (b) discrimination (c) insight (d) perceptual learning.
4. Classical conditioning is most important in the learning of (a) lever pressing (b) fear (c) complex skills (d) maze running.
5. The simplest example of learning is (a) the unconditioned response (b) the conditioned response (c) the conditioned stimulus (d) the instrumental response.
6. Presenting the conditioned stimulus alone results in (a) reinforcement (b) generalization (c) extinction (d) instrumental response.
7. In order to acquire a response, an animal must have (a) a conditioned stimulus (b) an unconditioned stimulus (c) reinforcement (d) instrumental response.
8. When a stimulus similar to the conditioned stimulus elicits the conditioned response, the phenomenon is called (a) secondary reinforcement (b) partial reinforcement (c) response generalization (d) stimulus generalization.
9. In stimulus generalization, the more similar the testing stimulus and the conditioned stimulus (a) the greater the response (b) the less the response (c) the better the discrimination (d) the poorer the discrimination.

10. In classical Pavlovian conditioning, extinction is the result of (a) pairing the unconditioned stimulus, leaving out the conditioned stimulus (b) pairing the conditioned stimulus with the conditioned response, leaving out the unconditioned stimulus (c) pairing the unconditioned stimulus with the conditioned response, leaving out the conditioned stimulus (d) giving the animal a rest.
11. The method of introspection (a) brings to light unconscious steps in thinking (b) proved to be quite limited in the study of thinking (c) permits the restriction of problems to a few known elements (d) has been used more and more in recent years.
12. The first premise to be accepted in a logical analysis of thinking is that (a) thinking consists of representative processes (b) thinking consists of images (c) thinking consists of muscle movements (d) none of these.
13. Learning and thinking are closely related because (a) many learning problems permit thinking (b) many thought problems permit learning (c) thinking usually results in learning (d) all of these.
14. Experiments on the role of images in thinking showed that (a) when a person is asked to "name a fruit" he has many images (b) few, if any, important events in thinking are unconscious (c) images may be functional in solving manipulative problems (d) all of these.
15. A response is ready and just waiting to be triggered. This is called (a) an image (b) a set (c) introspection (d) an implicit response.
16. The imageless-thought hypothesis led to what two important ideas about thinking? eidetic imagery and set (b) set and unconscious processes in thinking (c) functional imagery and central processes (d) set and mental maps.
17. Eidetic imagery (a) enables people who have it to give as accurate an account of a remembered object as of a present one (b) is fairly common but unnoticed (c) occurs more frequently in adults than in children (d) is just a legend that is not true.
18. For Watson, the important aspect of thinking was (a) the set (b) association (c) muscle responses (d) images.
19. The term "hallucination" is best applied to (a) incorrectly recalled images (b) daydreams involving fantasy (c) images regarded as real (d) illusions.
20. A proponent of the idea that thinking was subvocal talking was (a) Watson (b) Kohler (c) Hull (d) Hunter.
21. When an organism's behavior is instrumental in producing a reinforcing event, the learning is described as (a) respondent; (b) trial and error; (c) operant (d) insight.

22. The interpretation of a negatively accelerated learning curve would be that (a) the rate of acquisition is relatively slow (b) learning proceeds at an increasing rate (c) increments of learning get successively smaller with each trial (d) the rate of learning changes from slow to fast.
23. If some form of punishment is used to train an individual not to respond in a certain way, it is especially important that (a) the individual understand what the punishment means (b) the punishment follow the unwanted response immediately (c) the punishment begins before the response (d) the individual never be allowed to avoid the punishment.
24. According to evidence from studies of the conditioned eye blink, the optimal interval between the CS and UCS for conditioning is about (a) 0.5 second (b) 1.0 second (c) 0.1 second (d) 1.5 second.
25. One phenomenon which poses special difficulties of explanation for the reinforcement theory of learning is (a) backward conditioning (b) spontaneous recovery (c) stimulus inhibition (d) sensory pre-conditioning.
26. Which of these does not apply to the study of transfer of training by Broyler Thorndike, and Woodyard? (a) the studies were done on school subject training (b) Students of equal intelligence were used throughout (c) Transfer effects of different school subjects were compared (d) Differences found were small and not very reliable.
27. Which of the following is not true of memory in general (a) Memory effects often influence relearning, although they may not be recognized (b) Memory of a learned response may last a lifetime (c) We can observe memory only as some change in the brain (d) Relearning is one of the most sensitive measures of memory.
28. In the last analysis, a course on "developing a good memory" will be successful to the extent that it (a) is used by relatively intelligent individuals (b) provides sufficient exercises of varied material to be memorized (c) tells the user how to use his memory in specific, not general, terms (d) aids the individual in acquiring efficient learning techniques.
29. From experimental evidence to date, the most adequate theory of forgetting is one based upon (a) leveling (b) interference (c) repression (d) disuse.
30. Which of these is the best statement of what we know about the role of the frontal lobes in memory? (a) The frontal lobes specifically define ability in delayed reaction; (b) The frontal lobes are involved in most memories except delayed reaction; (c) Injuries to the frontal lobes do not disturb delayed reaction if the animal's motivation is maintained; (d) Injuries to the frontal lobes prevent both delayed reaction and symbolic memory.

31. In Pavlov's experiment, the conditioned stimulus was (a) an auditory stimulus (b) the sight of food (c) food in the mouth (d) an electric shock.
32. In comparison with a conditioned response that has been reinforced on every trial, one that has been partially reinforced is (a) more difficult (b) less difficult (c) equally difficult (d) sometimes more and sometimes less difficult--to extinguish.
33. In comparison with the response to a conditioned stimulus, the response to a similar stimulus is usually (a) stronger (b) weaker (c) equally as strong (d) weaker at first, but stronger later on.
34. A child frightened by a cow began to fear other cows. This illustrates (a) extinction (b) partial reinforcement (c) generalization (d) all of these.
35. Reinforcing a conditioned response while nonreinforcing a response to a similar stimulus usually results in (a) generalization (b) partial reinforcement (c) extinction (d) discrimination.
36. The term for relatively undirected thinking is (a) implicit (b) unconscious (c) latent (d) autistic.
37. Traditional views of thinking characterize the process as being (a) wish-fulfilling (b) unrealistic (c) both 1 and 2 (d) neither 1 nor 2.
38. Most thinking (a) is rational (b) is conscious (c) has emotional aspects (d) all of these.
39. Thinking is a process that (a) takes place in the mind (b) involves the whole person (c) is incompatible with feeling (d) is entirely at a conscious level.
40. The set of characteristics by which a person identifies an object or class is a (a) referent (b) symbol (c) concept (d) all of these.
41. Cues from fatigue which serve to set off a response are called: (a) instinctive, (b) instrumental (c) fractional (d) symbolic.
42. "The thought is father to the act" refers to; (a) symbolic behavior (b) learning process (c) internal substitution (d) ideomotor action.
43. Watson described thinking as; (a) a series of associations (b) a result of early learning behavior (c) a series of phase sequences (d) implicit speech.
44. In man, language serves the symbolic function required in the delay situation. In animals \_\_\_\_\_ might accomplish the same results as language does in man: (a) symbols (b) reflexes, (c) rg's (d) thinking.

45. When one kind of item or event substitutes for another, this mediation activity might be termed \_\_\_\_\_ behavior: (a) deductive (b) systematic (c) symbolic (d) mental.

### Matching Question

DIRECTIONS: Match Column B with Column A and place the number of your on the special answer sheet.

Column A	Column B
46. produced by learning to attach new stimuli to old responses	1. recall 2. meaningful material 3. negative transfer 4. recognition 5. positive transfer 6. nonsense syllables 7. savings
47. retroactive inhibition	
48. the measure of retention most used in the laboratory	
49. the easiest type of material to forget	
50. the most difficult measure of retention	
51. rat takes more trials to extinguish	1. partial reinforcement 2. secondary reinforcement 3. generalization 4. extinction 5. punishment 6. classical condition 7. instrumental learning
52. rat takes same number of trials, but	
53. rat gets a reward for responding	
54. rat responds to a stimulus similar to	
55. rat is no longer reinforced	
56. forgetting	1. reward 2. generalization 3. discrimination 4. emotional blocking of memory 5. no reward 6. facilitation of learning 7. retroactive inhibition
57. extinction	
58. repression	
59. positive transfer	
60. reinforcement	

## Column A

61. does not change the environment of animal
62. originally had no connection with the unconditioned response
63. response to a stimulus which is somewhat different from the one which
64. changes the environment of the animal
65. originally elicited the unconditioned response
66. forgetting
67. emitted behavior
68. extinction
69. positive transfer
70. savings
71. generalization
72. positive transfer
73. extinction
74. negative transfer
75. retroactive inhibition

## Column B

1. conditioned response
  2. conditioned stimulus
  3. generalization
  4. unconditioned stimulus
  5. instrumental learning
  6. unconditioned response
  7. classical conditioning
- 
1. classical conditioning
  2. instrumental learning
  3. relearning
  4. unaided recall
  5. similar interpolated responses
  6. unreinforced responses
  7. retroactive inhibition
- 
1. learning task B interferes with retention of task A
  2. learning task A interferes with learning task B
  3. learning task A facilitates learning task B
  4. stimuli similar to conditioned stimulus elicit conditioned response
  5. previously conditioned stimulus is reinforcer
  6. occasional reinforcement
  7. withdrawal of reinforcement

True - False Questions

76. All one's social values and traditions are learned.
77. Learning is any relatively permanent change in behavior.
78. In the type of conditioning introduced by Pavlov, the salivation response to food is called the conditioned response.
79. In Pavlov's type of conditioning, the bell or buzzer is called the unconditioned stimulus.
80. In conditioning, reinforcement may be defined as presenting the unconditioned stimulus immediately following the conditioning stimulus.
81. The experiment on conditioning the GSR serves as a model for the development of irrational fears in people.
82. The experiment with the GSR described in the chapter on learning illustrates the process of extinction.
83. The first event to occur at the beginning of instrumental learning is a well-defined conditioned stimulus.
84. A rat cannot acquire a lever-pressing response with only secondary reinforcement.
85. An animal cannot learn a conditioned response without reinforcement.
86. In instrumental learning, no conditioned stimulus is presented by the experimenter.
87. Classical conditioning differs from instrumental conditioning in that the former does not require reinforcement.
88. Extinction is the procedure of removing reinforcement after learning has taken place.
89. Partial reinforcement is less effective at "stamping in" responses than reinforcement for every response.
90. Partial reinforcement may be said to increase the reserve of responses during extinction.
91. Secondary reinforcement is of great importance in everyday learning.
92. A response can be eliminated by mild punishment if it is not the only response which can satisfy the motive involved.
93. When punishment provides a cue as to what should or should not be done, it usually proves effective in controlling behavior.

94. Punishment has a negligible effect upon the total reserve of responses during extinction.
95. Punishment is never effective in eliminating undesirable behavior.
96. Classical conditioning procedures can be so arranged as to develop a discrimination.
97. The threat of punishment is usually no more effective than actual punishment.
98. Primary reinforcement is necessary for rats to learn something about a maze.
99. Because incidental learning is latent for a time, it is also called latent learning.
100. The learning of concepts is a special case of discriminative learning.

**APPENDIX F**

**JOB SHEET #5--TEST #5**

## INTRODUCTION TO PSYCHOLOGY

## Job Sheet #5

Remembering and Forgetting

1. How can one experiment with images? What do such experiments show?
2. How can retention be measured? What is the most sensitive method of measuring it?
3. How does repression affect memory? What causes repression?
4. What does negative transfer have to do with forgetting? Why is there less forgetting after a period of sleep than after a period of waking?
5. How does the game of Gossip illustrate changes in retention?
6. Is "exercising the mind" a realistic objective for education? When can education be expected to transfer to the solution of practical problems?
7. What are eidetic images? How are images distorted?
8. Why is it difficult to think logically?
9. Define symbolic processes. Describe experiments in which they have been studied.
10. What is the relation between concepts and the process of abstraction?
11. Why is reasoning so often distorted?
12. What, in essence is reasoning? Cite experiments that illustrate it.
13. What is a set? How may it help or hinder problem solving?
14. Can animals learn concepts? What are the easiest concepts for children to learn?
15. The best way to improve one's memory is to improve one's learning. Why?
16. What is overlearning? How does it affect retention?

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INTRODUCTION TO PSYCHOLOGY  
(Evaluation)  
Job Sheet #5  
Remembering and Forgetting

1. Classical conditioning is extremely important in (a) trial-and-error learning (b) lever pushing (c) emotional learning (d) skill learning.
2. The galvanic skin response (a) is a voluntary conditioned response (b) shows stimulus generalization (c) neither of these (d) both of these.
3. The kind of learning in which the response accomplishes a change in the environment is called (a) classical (b) respondent (c) instrumental (d) practical.
4. Instrumental behavior (a) accomplishes some result (b) is a reflex response (c) is an automatic response (d) all of these.
5. If a rat pushes a lever just to hear a buzzer sound, this is an example of (a) primary reinforcement (b) secondary reinforcement (c) partial reinforcement (d) none of these.
6. When a previously neutral stimulus acquires the ability to reinforce a response, we have a case of (a) differentiation (b) primary reinforcement (c) partial reinforcement (d) secondary reinforcement.
7. Which of the following is not true of instrumental learning? (a) there is no specific conditioning stimulus (b) a Skinner box is frequently used to study it. (c) it does not require reinforcement, as does classical conditioning (d) it usually depends on accidental response.
8. Social or parental approval is (a) a punishment (b) a partial reinforcer (c) a primary reinforcer (d) a secondary reinforcer.
9. The number of responses emitted during extinction is increased most by (a) partial reinforcement (b) more reinforcement (c) removing secondary reinforcement (d) punishment.
10. Partial reinforcement (a) increases resistance to extinction (b) decreases resistance to extinction (c) decreases rate of responding (d) makes learning nearly impossible.
11. Punishment during early extinction (a) suppresses for a time, but does not abolish, learned responses (b) totally abolishes such responses (c) reduces the total number of responses by about 50 percent (d) has no effect
12. Most babies learn to cry to get what they want because parents (a) too consistently ignore the child's wants (b) occasionally "give in" to the baby's cries (c) never pick the baby up except when necessary (d) all of these.
13. How may punishment be expected to affect the number of responses during extinction? (a) decrease (b) increase (c) have little or no effect upon (d) greatly decrease.

14. Mild punishment can be used to eliminate undesirable responses when (a) there are alternative responses that can satisfy the individual's needs (b) the responses are highly motivated (c) the punished behavior is highly stereotyped (d) none of these.
15. Differential reinforcement refers to (a) reinforcing the correct response part of the time (b) secondary reinforcement without primary reinforcement (c) providing different reinforcements from trial to trial (d) reinforcing one stimulus and extinguishing another.
16. Learning a concept is learning (a) to distinguish some property objects have in common (b) to make a discrimination (c) both of these (d) neither of these.
17. Latent learning refers to (a) learning without primary reinforcement (b) learning without making correct responses (c) both of these (d) neither of these.
18. If one is constructing a curve for maze learning, the best measure to use is (a) errors (b) accuracy (c) number of trials to learn (d) none of these
19. Plateaus are most likely to turn up in learning to operate (a) a camera (b) a typewriter (c) a bicycle (d) an automobile.
20. One can explain the plateaus in some learning curves of complex skills in terms of (a) reaching a physiological limit (b) several stages in acquiring a skill (c) increased motivation (d) all of these.
21. When a plateau in learning is reached, it is advisable to (a) practice harder (b) practice more regularly (c) accept it as the best one can do (d) change the mode of practice
22. For the great majority of skills, the best learning schedule is (a) long practice periods and short rest periods (b) short practice periods and long rest periods (c) short practice periods and short periods (d) long practice periods and long rest periods.
23. To learn verbal material, it is best to spend one's time (a) reading (b) reciting (c) reading a lot and reciting a little (d) reading and reciting.
24. College students learn mazes at what rate compared to rats? (a) much more rapidly (b) somewhat more rapidly (c) at about the same rate as (d) more slowly than.
25. In general, the statistical structure of language (a) affects only meaning and not the difficulty of learning (b) makes meaningful material more difficult to learn than nonsense syllables (c) makes meaningful material easier to learn than nonsense syllables (d) affects learning difficulty but not the meaning of language.

26. We expect the greatest negative transfer between two tasks when (a) the stimuli are the same and the responses are different (b) the stimuli are different and the responses are the same (c) the stimuli are different and the responses are different (d) both stimuli and responses are the same.
27. Positive transfer results when the learning involves (a) new responses and old stimuli (b) old responses and new stimuli (c) a completely new task (d) new responses and new stimuli.
28. When school subjects aid in the solution of everyday problems, we now consider this a case of (a) retroactive facilitation (b) formal discipline (c) negative transfer (d) positive transfer.
29. If, after learning to spell the word "new" in its accepted fashion, you then learn to spell it "nu" you may expect (a) positive transfer (b) negative transfer (c) proactive facilitation (d) none of these.
30. The study of Greek and Latin was dropped from the American curriculum because (a) they have no educational value (b) there were not enough teachers to teach these courses (c) they proved too difficult for modern students (d) there was insufficient transfer to practical studies.
31. The method of measuring retention that makes it most difficult for the learner to achieve a high score is (a) recall (b) savings (c) recognition (d) repetition.
32. "Savings" is a method involving (a) recall (b) reproduction (c) recognition (d) relearning.
33. The measure of retention which is concerned with the ability to identify previously learned material is (a) recognition (b) recall (c) savings (d) reproduction
34. Geometry would be most effective in providing for transfer of training if (a) the theorems and solutions of Euclid were carefully memorized (b) learning were massed rather than distributed (c) general principles and steps of reasoning were emphasized (d) the teacher pointed out its applications.
35. When comparing the amount forgotten after 15 days with that forgotten after 30 days, we find (a) a great deal more is forgotten after 30 days (b) a great deal less is forgotten after 30 days (c) a little more is forgotten after 30 days (d) there is no difference between 15 days and 30 days.
36. Ebbinghaus performed his experiments using (a) meaningful sentences (b) nonsense syllables (c) meaningful words (d) poetry.

37. In his pioneering experiments, Ebbinghaus found that (a) the amount of retention increases with the meaningfulness of the material (b) nonsense syllables are of no practical use in learning experiments (c) nonsense syllables are forgotten more slowly than facts (d) the curve of forgetting is negatively accelerated.
38. Curves of forgetting are negatively accelerated for what kind of material? (a) nonsense (b) verbal (c) meaningful (d) all kinds
39. In memorizing lists of nonsense syllables, there is a maximum retroinhibition if (a) the responses on both lists are the same (b) both the responses and the stimuli on the two lists are different (c) the stimuli are the same but the responses are different (d) there is a long rest in between learning the lists.
40. When new learning interferes with the retention of previously learned material, the effect is known as (a) proactive inhibition (b) retroactive inhibition (c) positive transfer (d) none of these.
41. Retention is better after (a) waking than after sleep (b) 8 hours of sleep than after 2 (c) sleeping than after waking (d) activity than after sleep.
42. The experiment with paired-associate learning illustrates (a) learning things two at a time (b) retroactive inhibition (c) forgetting (d) all of these.

#### Matching Questions

Directions: Match Column B with Column A and place the number of your answer on the special answer sheet.

#### Column A

#### Column B

- |   |                                 |
|---|---------------------------------|
| 43. Produced by learning to attach new stimuli to old responses | 1. Recall                       |
| 44. Retroactive inhibition                                      | 2. Meaningful material          |
| 45. The measure of retention most used in the laboratory        | 3. Negative transfer            |
| 46. The easiest type of material to forget                      | 4. Recognition                  |
| 47. The most difficult measure of retention                     | 5. Positive transfer            |
| 48. Forgetting  | 6. Nonsense syllables           |
| 49. Extinction  | 7. Savings                      |
| 50. Repression  | 1. Reward                       |
| 51. Positive transfer   | 2. Generalization               |
| 52. Reinforcement   | 3. Discrimination               |
|   | 4. Emotional blocking of memory |
|   | 5. No reward                    |
|   | 6. Facilitation of learning     |
|   | 7. Retroactive inhibition       |

- |                            |  |
|----------------------------|--|
| 53. Forgetting             | 1. Classical conditioning  |
| 54. Emitted behavior       | 2. Instrumental learning   |
| 55. Extinction             | 3. Relearning  |
| 56. Positive transfer      | 4. Unaided recall  |
| 57. Savings                | 5. Similar interpolated responses                                      |
|                            | 6. Unreinforced responses  |
|                            | 7. Retroactive inhibition  |
|                            |  |
| 58. Generalization         | 1. Learning task B interferes with retention of task A                 |
| 59. Positive transfer      | 2. Learning task A interferes with learning task B                     |
| 60. Extinction             | 3. Learning task A facilitates learning task B                         |
| 61. Negative transfer      | 4. Stimuli similar to conditioned stimulus elicit conditioned response |
| 62. Retroactive inhibition | 5. Previously conditioned stimulus is reinforcer                       |
|                            | 6. Occasional reinforcement  |
|                            | 7. Withdrawal of reinforcement   |

### True-False Questions

Directions: If the statement is true, write the letter "T" in the space provided on the answer sheet; if the statement is false, write the letter "F" in the space provided on the answer sheet.

63. All one's social values and traditions are learned.
64. Learning is any relatively permanent change in behavior.
65. In the type of conditioning introduced by Pavlov, the salivation response to food is called the conditioned response.
66. In Pavlov's type of conditioning, the bell or buzzer is called the unconditioned stimulus.
67. In conditioning, reinforcement may be defined as presenting the unconditioned stimulus immediately following the conditioning stimulus.
68. The experiment on conditioning the GSR serves as a model for the development of irrational fears in people.
69. The first event to occur at the beginning of instrumental learning is a well-defined conditioned stimulus.
70. A rat cannot acquire a lever-pressing response with only secondary reinforcement.
71. An animal cannot learn a conditioned response without reinforcement.
72. In instrumental learning, no conditioned stimulus is presented by the experimenter.

73. Classical conditioning differs from instrumental conditioning in that the former does not require reinforcement.
74. Extinction is the procedure of removing reinforcement after learning has taken place.
75. Partial reinforcement is less effective at "stamping in" responses than reinforcement for every response.
76. Partial reinforcement may be said to increase the reserve of responses during extinction.
77. Brian and Harter did a study which showed that the "plateau" is in skills.
78. A response can be eliminated by mild punishment if it is not the only response which can satisfy the motive involved.
79. When punishment provides a cue as to what should or should not be done, it usually proves effective in controlling behavior.
80. Punishment has a negligible effect upon the total reserve of responses during extinction.
81. Secondary reinforcement is of great importance in everyday learning.
82. In the study of the skills of telegraphy, the plateaus were found on the receiving curve.
83. Primary reinforcement is necessary for rats to learn something about maze.
84. Maze learning may be regarded as "stupid" learning.
85. The learning of concepts is a special case of discriminative learning.
86. In general, learning is more efficient if rest periods are long and infrequent.
87. The threat of punishment is no more effective than actual punishment.
88. Because incidental learning is latent for a time, it is also called latent learning.
89. The plateaus in the telegraphy study were determined by the limit of the learner's capacity.
90. It is better to learn by reading than by listening.
91. Meaningful material is learned more easily than material which has the statistical structure of language.
92. Our knowledge of the statistical structure of language makes it easier to learn meaningful, than meaningless, material.

93. Meaningless material is learned more rapidly than is meaningful material.
94. Meaningful material has a statistical organization inherent in the language.
95. Stimulus generalization is a case of negative transfer.
96. Transfer of training takes place only when the stimuli and/or responses involved are similar.
97. Sometimes past experiences with a problem makes it harder to solve a similar problem.
98. If subjects such as Latin and Euclidian geometry are useful outside of school, it is because they train a person to think.
99. Recall is the most conservative method of studying retention.
100. Savings scores are actually a measure of relearning.

**APPENDIX G**

**JOB SHEET #6--TEST #6**

## INTRODUCTION TO PSYCHOLOGY

## Job Sheet #6

Personality

1. What requirements govern the scientific study of personality characteristics? (References #1, #2, #3, #4)
2. How is it possible to choose a reasonable number of traits to use in describing personality? (References #5, #6, #7, #8, #9)
3. What are the main defects of personality questionnaires? What steps may be taken to guard against these defects? What are some of the more satisfactory questionnaires? (References 10, #11, #12)
4. Define a situation test. How valid are such tests? (Reference #13)
5. Is the interview a satisfactory method for evaluating a person? (References #14, #15, #16, #17, #18, #19)
6. What is a rating scale? How may it be constructed? (References #20, #21, #22, #23, #24)
7. Describe two kinds of projective tests and the way in which they are administered. (References #25, #26, #27, #28, #29)
8. Does personality have a biological basis? What is meant by a predisposition? (Reference #34)
9. Discuss physique and temperament with reference to personality. (References #35, #36, #37, #38)
10. How is personality development affected by culture, by family? (Reference #39, #40, #41, #42)
11. What are the id, ego, and superego? What aspect of personality do they represent? (Reference #43, #44, #45, #46, #47)
12. What is meant by the self? How does the self develop? Of what significance is a person's perception of his self? (References #48, #49, #50, #51)

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34. Morgan, op. cit. pp. 231-232
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36. Hilgard, op. cit., pp. 485-488
37. Sartain, op. cit., op. 142-144.

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40. Smith, op. cit., pp. 143-144
42. Morgan, op. cit., 236-240
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48. Morgan, op. cit., p. 241-247
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INTRODUCTION TO PSYCHOLOGY  
(Evaluation)  
Job Sheet #6

Personality

**DIRECTIONS:** Select the correct answer and place the number preceding your selection on the special answer sheet.

Multiple-choice Questions

1. The emphasis in the study of personality is on (1) consistency of behavior (2) individual acts (3) group performance (4) none of these.
2. The unabridged dictionary contains about how many adjectives to describe how people act, think, perceive, feel, and behave? (1) 2,000 (2) 8,000 (3) 18,000 (4) 50,000.
3. To be meaningful, personality characteristics must be (1) factorial and characteristic (2) distinctive and comprehensive (3) comprehensive and factorial (4) characteristic and distinctive.
4. Which of the following is a useful personality characteristic? (1) works for a living (2) has his hair cut by a barber (3) goes to school (4) has well-kept appearance.
5. The most fruitful level at which to study personality is probably the (1) trait level (2) type level (3) specific-response level (4) the test level.
6. The primary purpose of factor analysis of a large number of traits is to (1) discover underlying motives (2) discover additional traits (3) develop a smaller number of basic traits (4) collect traits into types.
7. Factor analysis involving a large number of traits serves to (1) define additional traits (2) sort out useless traits (3) find a few basic traits that will describe behavior adequately (4) all of these.
8. The number traits which have been fairly well established by factor analysis is about (1) 3 (2) 12 (3) 80 (4) 5,000.
9. According to the trait approach to personality, the behavior of an individual (1) can be predicted from a single act (2) is determined by his type (3) can be considered to fall along a continuum (4) none of these.
10. Extroverts and introverts are examples of (1) traits (2) types (3) habitual responses (4) none of these.
11. The primary drawback to a description of personality in terms of traits is that (1) it presents too simple a picture (2) it lumps together a number of types (3) it does not allow for individual behavior patterns (4) it overlooks the motive underlying behavior.

12. The most inclusive concept of personality in terms of (1) traits (2) motives (3) modes of adjustment (4) factors.
13. To conceive of personality in terms of modes of adjustment is to piece together (1) traits and types (2) traits and factors (3) types and motives (4) traits and motives.
14. The main objective to most personality questionnaires is that (1) faking can give misleading results (2) administration is too lengthy and complicated a procedure (3) they tend to give an index of intelligence rather than personality (4) they are too unobjective.
15. The test which assesses such traits as depression and paranoia on the basis of how normal and mentally ill people answered the questions is the (1) Allport-Vernon Scale (2) Minnesota Multiphasic Personality Inventory (3) Cattell-Luborsky Test (4) the Situational Test
16. The Minnesota Multiphasic Personality Inventory (1) is a situational test (2) measures interest in six interest areas (3) measures repression (4) includes a lie scale.
17. The scale on the MMPI which picks out persons who are likely to become antisocial is the (1) paranoia scale (2) psychasthenia (3) hypomania scale (4) psychopathic deviate scale
18. The Office of Strategic Service studies of leadership are examples of (1) pencil-and-paper tests (2) situation tests (3) projective tests (4) no test at all.
19. The situation tests used during the war by the O.S.S were designed primarily to test (1) motor skills and construction ability on realistic problems (2) personality reactions under conditions of frustration and stress (3) verbal and performance intelligence comparable to those abilities measured by the Stanford-Binet (4) all of these.
20. Experimental measures of personality (1) are readily applicable to practical testing (2) provide suggestions for test design (3) have no relation to personality testing (4) none of these.
21. The method of assessment which gives the most comprehensive view of personality is the (1) interview (2) situation test (3) paper-and-pencil test (4) experimental test.
22. The advantage of the interview in the assessment of personality is its (1) objectivity (2) reliability (3) comprehensiveness (4) economy

23. On the Rorschach test, the first question asked is (1) "What might this be?" (2) "Who is this?" (3) "What story does this tell?" (4) "Why do you see a butterfly?"
24. The one test of the following which cannot be considered a paper-and-pencil test is the (1) Rorschach (2) Minnesota Multiphasic (3) Allport-Vernon (4) Cattell-Luborsky.
25. Which of the following is not a projective test? (1) Thematic Apperception Test (2) The Ink Blot Test (3) Rorschach test (4) Minnesota Multiphasic Personality Inventory.
26. An example of a Thematic Apperception Test picture might be (1) a man on a rope at the side of a building (2) a large black ink blot on a white background (3) a cartoon with the caption left off (4) a bizarre geometrical design.
27. The test that requires the examinee to make up stories about a series of photographs is the (1) Thematic Apperception Test (2) Rorschach test (3) word-association test (4) the Allport-Vernon Test.
28. The Rorschach Ink Blot Test differs from the TAT in that (1) the TAT is not a projective test (2) the TAT has standard objective scoring method (3) Rorschach figures can only be interpreted in one way (4) it is designed to uncover personality dynamics.
29. The effects of glands on personality (1) are commonly observed (2) are on the whole quite negligible (3) are seen only in dramatic cases of over- or underdevelopment of glands (4) are seen most dramatically in the case of the thymus gland.
30. Predispositions refer to the manner in which individuals differ with respect to their susceptibility to certain personality disorders due to (1) cultural differences (2) environmental differences (3) hereditary differences (4) learned factors.
31. Students of somatotype are interested in the relationship of personality to (1) family background (2) endocrine glands (3) physique (4) temperament.
32. The extremely mesomorphic individual is characterized by (1) prominence of abdomen, fat, and deeper tissues (2) muscles, bones, and connective tissue. (3) fragility and "linearity" (4) roundness, smoothness, and femininity.
33. A person with a somatotype high in endomorphy might be given the rating (1) 5-3-2 (2) 4-4-4 (3) 3-5-2 (4) 2-6-2.
34. The reason for the correlation between intelligence and health is (1) biological (2) social (3) both of these (4) neither of these.

35. Which is not an explanation of the relation between intelligence and adjustment? (1) compensation (2) biological factors (3) means of recognition (4) motivation.
36. The emotional characteristics of the Balinese have been attributed to (1) the shortage of food (2) child-rearing practices (3) their rugged individualism (4) their arctic environment.
37. According to Freud, weaning a child too late makes him (1) easygoing (2) pessimistic and verbally aggressive (3) compulsive (4) rigid.
38. Children of the lower socioeconomic groups (1) learn early to avoid trouble (2) fear pain less than middle-class children (3) have sex experience relatively late (4) none of these.
39. Personality is relatively continuous and unchanging because of (1) learning (2) endowment (3) social roles (4) all of these.
40. Personality changes occur when (1) new habits supplant old ones (2) motivational conflicts are resolved (3) needs previously frustrated are satisfied (4) all of these.
41. Which of the following is not a personality syndrome? (1) hypochondriasis (2) psychasthenia (3) authoritarian personality (4) introversion.
42. The aspect of personality that corresponds to learning instrumental acts and of the perceived self is (1) id (2) ego (3) conscience (4) superego.
43. A person comes to have an excessive evaluation of himself if he has been (1) praised for poor performance (2) too successful (3) subjected to belittlement (4) subjected to authoritarian treatment.

DIRECTIONS: In the ( ) in front of the number of the test on your answer sheet, write the letter of the best term.

A

B

- |                                |                               |
|--------------------------------|-------------------------------|
| 44. Minnesota Multiphasic      | 1. ambiguous pictures         |
| 45. Allport-Vernon Scale       | 2. ink blots                  |
| 46. Cattell-Luborksy Test      | 3. situation test             |
| 47. Rorschach test             | 4. interests                  |
| 48. Thematic Apperception Test | 5. sense of humor             |
|                                | 6. rating scale               |
|                                | 7. objective personality test |

AE

- |  |  |
|--|--|
| <p>49. superego</p> <p>50. id</p> <p>51. ego</p> <p>52. defense mechanism</p> <p>53. self</p> <p>54. endomorph</p> <p>55. mesomorph</p> <p>56. viscerotonic</p> <p>57. somatonic</p> <p>58. cerebrotonic</p> | <p>1. personality syndrome</p> <p>2. disguises motives</p> <p>3. commonly called conscience</p> <p>4. serves reality principle</p> <p>5. acquired motive</p> <p>6. storehouse of motives</p> <p>7. awareness of own personality</p><br><p>1. is extremely large</p> <p>2. likes privacy</p> <p>3. loves physical comfort</p> <p>4. has prominent abdomen, fat, and deeper tissues</p> <p>5. appears square and muscular</p> <p>6. enjoys exercise</p> <p>7. appears thin and fragile</p> |
|--|--|

True-False Questions

59. Devices which are not objective are of no use in personality measurement.
60. An individual can be fully described by listing his traits.
61. Each of several possible sets of personality characteristics serve some particular purpose in describing personality.
62. The emphasis in the study of personality is on the individual act.
63. A trait should be characteristic of the way a person behaves in a large number of situations.
64. Factor analysis is an objective technique which assures the isolation of true traits from any battery of test.
65. In order to do a factor analysis, the traits to be studied must be decided upon beforehand.
66. Typing of personalities is useful in demonstrating the continuity of a trait.
67. The greater the number of types, the better the typology

68. Personality typology has lost favor with psychologists because it is impossible to sort people into a limited number of types.
69. A trait includes fewer personality characteristics than does a type.
70. Complete knowledge of an individual's observable traits does not necessary explain the needs responsible for his behavior.
71. If we know what a person's motives are, we can predict his behavior because we know how he will satisfy them.
72. The description of personality in terms of basic motives is impossible in adults because of the complexity of their motives.
73. A knowledge of traits will help in predicting future behavior more than will a knowledge of motives.
74. A personality test which does not yield a complete description of personality can have no practical application.
75. Pencil-and-paper tests are easy to fake.
76. One of the disadvantages of the personality questionnaire is that it is easy to fake.
77. Personality questionnaires are quite valid if the items are carefully selected on the basis of content.
78. Pencil-and-paper personality questionnaires ensure validity because they ask direct questions about personality.
79. One of the advantages of the Minnesota Multiphasic Personality Inventory is that deliberate distortion or lying is detectable.
80. One advantage of personality questionnaires is that the question have only to be stated clearly to ensure their validity.
81. In one study it was found that a cheater in one situation was generally a cheater in other situations.
82. The interview is not too useful in the scientific investigation of personality.
83. The personal interview, though sometimes useful, is generally not classified as an objective measure of personality.
84. One advantage of projective tests is that it is difficult for the subject to fake his responses.
85. Rating scales are widely adaptable to many uses and do not need to be constructed by trained people.

86. Projective tests are like interviews in that they yield subjective measures and require much skill in interpretation.
87. One can see predispositions unfolding at birth.
88. People are born into the world with certain predispositions to develop their personalities along certain lines.
89. The endomorph is relatively fragile and linear in body build.
90. The cerebrotonic individual loves privacy.
91. The personality of a child with subnormal intelligence develops in about the same way regardless of the culture in which he is raised.
92. Special talents tend to be expressed even when attempts are made to suppress them.
93. Superior intelligence helps a person make better social adjustments.
94. Our culture standardizes personality more than primitive cultures do.
95. Primitive cultures prescribe more rigid ways of behaving than do civilized cultures.
96. Intelligent children are usually personality problems.
97. The grown man who sulks when he is angry with his wife probably learned this trait in dealing with his mother.
98. Identical twins reared together have the same personality.
99. The basic personality does not change even over long periods of time.
100. Syndromes are satisfactory ways of classifying people.

**APPENDIX H**

**JOB SHEET #7--TEST #7**

## INTRODUCTION TO PSYCHOLOGY

## Job Sheet #7

Mental Health

1. What therapies are employed in the treatment of mental illness? Who uses them? With whom are they used? (References #1, #2, #3, #4, #5)
2. What is psychotherapy? Who practices it? What is the modern trend in psychotherapy? Why? (References #6, #7)
3. Describe three major goals of psychotherapy. Why is any particular goal selected. (Reference #8, #9)
4. What is directive therapy? How, historically, did it come to be used (References #10, #11, #12)
5. Name, describe, and evaluate specific techniques used in directive therapy (References #13, #14)
6. What is the value of hypnosis and suggestion in psychotherapy? (References #15, #16)
7. What is client-centered therapy? How is it conducted? What is its principal purpose? (References #17, #18)
8. Define psychoanalysis. What is the important concept in psychoanalytic therapy? (References #19, #20, #21)
9. What is distributive analysis and synthesis? How does it differ from psychoanalysis? (Reference # 22)
10. Define psychodrama. What advantage does it have over individual psychotherapy? (Reference #23)
11. What is play and release therapy? (References #24, #25)
12. How can personal goals be discarded or changed (Reference #26)

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INTRODUCTION TO PSYCHOLOGY  
(Evaluation)  
Job Sheet #7

Mental Health

DIRECTIONS: Select the correct answer and place the alphabet preceding your selection on the special answer sheet.

1. The therapy that may be used with individuals suffering a psychological disorder is (a) brain surgery (b) convulsive electric shock (c) psychotherapy (d) all of these.
2. The fundamental task of the psychotherapist is to (a) alleviate anxiety and other symptoms immediately (b) solve the patients basic problems for him (c) help him understand his conflicts (d) relieve the situation that caused the trouble.
3. The psychotherapist determines his strategy on the basis of (a) life history (b) physical and psychological examinations (c) the picture he forms of the patient's problems (d) all of these.
4. The therapeutic strategy which is aimed at helping an individual meet an adjustment problem through reassurance is known as (a) situational (b) support (c) insight therapy (d) analysis and synthesis.
5. Much of the psychotherapy practiced many years ago was (a) directive (b) reeducation (c) hypnosis (d) all of these.
6. If a person has been well adjusted most of his life but has recently developed a neurosis, the most advisable therapy for him is (a) desensitization (b) supportive (c) insight (d) reeducation.
7. The drawback of suggestion and hypnosis used as therapeutic techniques is (a) symptoms appear again in somewhat different form (b) suggestions are sometimes taken too seriously (c) they will not work with hysterical symptoms (d) they will not work posthypnotically.
8. The main aim of client-centered therapy is (a) to help the person express his feelings freely (b) to interpret past experiences (c) to focus on the individual's problem (d) to provide a dependent relationship.
9. Psychoanalysis (a) is more nondirective than client-centered therapy (b) tries to help the patient understand his mechanisms of adjustment (c) attempts to avoid transference (d) interprets a patient's resistances to provide solutions to problems.
10. The type of therapy to which free association is most essential is (a) psychoanalysis (b) directive reeducation (c) distributive analysis and synthesis (d) client-centered
11. If a person talks too little or too much about a subject, it probably indicates (a) resistance (b) transference (c) extinction (d) nothing.

12. The tendency of the patient to express toward the therapist those emotions formerly associated with others is known as (a) rapport (b) catharsis (c) transference (d) resistance.
13. Emphasis in distributive analysis and synthesis is on (a) synthesis (b) analysis (c) support (d) reeducation.
14. The analytical technique which stresses synthesis is that which was advocated by (a) Adler (b) Meyer (c) Freud (d) Allport.
15. The patient and therapist discuss the patient's problems in an ordinary conversation in (a) client-centered therapy (b) psychoanalysis (c) re-education therapy (d) distributive analysis and synthesis.
16. Group therapy (a) is best used along with individual therapy (b) requires members of the group to support and depend upon each other (c) both of these (d) neither of these.
17. Mental health is a problem that touches (a) about 10 percent of the population (b) about 50 percent of the population (c) nearly everybody (d) none of these
18. Anxiety (a) should not be tolerated (b) is a kind of pain (c) is worse than it seems (d) is not present in well-adjusted people.
19. A good general principle to follow in daily living is (a) "be realistic" (b) "never compromise your ideals" (c) "don't get mad" (d) "analyze yourself".
20. Conflict and frustration may be reduced by (a) expressing emotions more freely (b) acquiring a frustration tolerance (c) both of these (d) neither of these.
21. An attempt to reduce conflict and frustration by (a) keeping busy is merely a way of avoiding the problem (b) expressing emotions in ways that are socially approved simply pens up the true emotion (c) postponing satisfaction is foolish (d) none of these.
22. The traditional version of the function of a therapist is that he must try to (a) correct the subject's emotional disturbances (b) diagnose the cause of the patient's problems and give a prescription to cure them (c) help the patient help himself (d) psychoanalyze the patient's disturbing memories.
23. Quantitative studies of responses in client-centered counseling show that (a) restatements of the problem decrease while statements of insight increase (b) the client, by restating his problems more frequently, can face them more squarely (c) what appeared as insight in early interviews was usually rationalization (d) expression of feeling increases from early to late interviews.

24. Which of the following is not a useful way of distinguishing mentally healthy from unhealthy persons (a) being well adjusted (b) being productive (c) having zest (d) having problems.
25. Group therapy is of value because (a) so many personal problems are based on social relations (b) it is an inexpensive form of therapy (c) it can be used by all kinds of therapists (d) it is about the only form of therapy which permits the therapist to help people without getting too involved with them
26. Which of the following is not considered a form of play therapy (a) shock therapy (b) release therapy (c) interpretive therapy (d) relationship therapy.
27. In the method of free association (a) the subject is given ink blots to interpret (b) the subject is encouraged to say anything, even things that seem trivial (c) the subject is put to sleep (d) the examiner does most of the talking.
28. The strongest force a psychotherapist has to work with is (a) his thorough knowledge of people's personalities (b) the unique relationship he can establish with the patient (c) his ability to plan a course of action for the patient that is right (d) his ability to judge unerringly the psychological correctness of the patient's emotional behavior.
29. A major difficulty in assessing the success of therapy stems from (a) the reluctance of patients to reveal their identity (b) the basic similarity of all techniques (c) inadequate criteria (d) the great variety of disorders and therapeutic techniques that exist.
30. Which of the following is not typical of traditional counseling assumptions (a) counselor is expert kind of educator (b) patient is not as wise as counselor (c) patient can take responsibility for understanding and solving his own problems (d) counselor's main job is to persuade client to follow a plan which is demonstrably sound.
31. Among the signs of transference in psychoanalytic interviews, one is (a) readiness to recall forgotten childhood memories (b) an increase in irritability during the interviews (c) misperception of the analyst (d) forgetting an appointment
32. Mary has a diffuse dread of everything and everyone. She is probably experiencing (a) a phobic reaction (b) obsessive-compulsive reaction (c) anxiety-reaction (d) conversion-reaction
33. The success of Alcoholics Anonymous in the treatment of people addicted to alcohol shows the importance to mental health of (a) useful work (b) social participation (c) self-understanding (d) a sense of guilt.
34. The process by which emotionally charged experiences are forgotten and banished from consciousness is called by Freud (a) resistance (b) repression (c) regression (d) dissociation.

35. One of the chief criticisms of client-centered therapy might be that (a) the subject feels that the psychotherapist never really understands him (b) the patient can talk all around his problem and never face it squarely (c) because the nondirective therapist does not give advice he never actually helps the patient help himself (d) the therapist, in giving so much advice, never allows the patient to assume any responsibility for his course of action.
36. In general, a nondirective therapist does one of the following (a) gives advice (b) gives the client reassurance that he isn't really doing so badly (c) tries to see the patient's problems as the patient sees them (d) shows the patient that his actions are immature and not logical in nature.
37. Before psychotherapy can be successful, the patient must have one of the following feelings (a) a complete faith and trust that the therapist can find the solution to his problems (b) a deep distrust of all nonpsychological therapy (c) a dissatisfaction with his past behavior and his techniques of adjusting to life (d) the knowledge that his problems are probably not organic.
38. The importance of environmental factors in delinquency is stressed by the fact that a large number of delinquents have homes in (a) well-to-do sections of a city (b) sections between well-to-do and business (c) business sections (d) the slums
39. During therapy a person's recollections of a traumatic situation and the free expression of the emotions which it evoked is called (a) repression (b) transference (c) abreaction (d) dissociation
40. When we speak of the individual's adjustment to his environment, we are talking about (a) whether or not he has inferiority feelings (b) how he sees his "life space" (c) his means of coping with his problems (d) his philosophical outlook on life
41. Jill is plagued by the idea that corpuscles are falling from her body. Therefore she refuses to move. She is experiencing (a) a phobic reaction (b) an obsession (c) a compulsion (d) a conversion-reaction
42. Disturbances in adjustment resulting from physical handicaps, intellectual retardation, or injury to the nervous system are called (a) organic behavior disorders (b) functional behavior disorders; (c) psychosomatic illnesses (d) hysterics or conversion reactions.
43. The functional behavior disorders (a) have no known organic basis (b) may involve physiological disturbances related to the after-effects of prolonged emotion (c) are thought to be learned behavior patterns (c) all of these
44. A study of symptoms of abnormal behavior in normal, neurotic, and psychotic soldiers revealed that (a) abnormal symptoms never appeared in normal soldiers (b) neurotic and Psychotic soldiers did not exhibit many of the same abnormal symptoms (c) in general, the symptoms were found least often in normal men, more often in the neurotic group, and most often in psychotics (d) all of these

45. The types of behavior disorder classed as behavior problems are (a) largely a result of the pressures of twentieth-century living (b) indicate serious maladjustment in all areas of social living (c) occur as specific non-adjustive reactions in otherwise normal people (d) all of these
46. Which of the following is not described as a useful procedure in treating problem children (a) opportunities to release hostility and tension (b) punishment (c) increasing the child's skills and self-confidence (d) establishing a satisfactory relationship between the child and the therapist
47. A chief difference between normal and neurotic behavior is that (a) neurotics are unable to take care of themselves--to take any vocational responsibility or to interact socially (b) neurotics are subject to continuous tension and anxiety in their daily lives (c) most neurotics are legally insane--not responsible for their own behavior (d) neurotics are so withdrawn from the world about them that they no longer abide by the morals and customs of society.
48. Which of the following is not a reaction pattern found in schizophrenia (a) simple schizophrenia (b) hebephrenic schizophrenia (c) paranoid schizophrenia (d) dissociation schizophrenia
49. Which of the following statements is true for all types of psychotherapy (a) the patient probably will not benefit from it if he is so seriously disturbed that he cannot communicate readily with others (b) its principal value is in relearning social skills (c) its principal value is in emotional support; (d) its principal value is in the patient's understanding of his own problems.
50. Which of the following statements is not true of group therapy (a) it may consist of discussions or role playing (b) the observers as well as the active participants may benefit from it (c) it is most useful in clinics for mildly maladjusted people, and of little value in psychiatric hospitals (d) it may serve to relieve emotional tension as well as to provide re-training in social skills.
51. A final stage of psychotherapy is (a) establishment of rapport (b) release (c) evaluation (d) termination of transference.
52. The tape-recording of psychotherapeutic interviews (a) makes the interview data available for repeated study (b) is of limited usefulness in the study of behavior during therapy because it is difficult to make the data objective (c) is not as promising a technique as those which measure aspects of behavior other than verbal content of the interview (d) all of these
53. A study of speech disturbances during the psychotherapeutic interview revealed that (a) such a measure may be indicative of the level of anxiety but needs additional validation (b) disturbances were highest at the beginning and end of the interview, indicating lack of rapport (c) speech disturbances are probably not related to the emotional reactions of the client (d) a content-analysis of the interview is more valuable than measurement of speech disturbances.

54. A study measuring heart rate, speech activity, and gestural movements indicated that (a) such measures show no relation to the emotional changes occurring during the interview (b) increases in gestural movements were related to periods of stress but increases in heart rate were not (c) increases in heart rate were associated with stress and increases in gestural movements were associated with stress and resentment (d) subjects instructed to conceal their emotions did not exhibit changes in any of the measures under stress.
55. Shock therapy (a) is widely and fairly successfully used, but the basis of its success is unknown (b) involves frightening the patient so badly that he begins to improve in self-defense (c) usually results in permanent impairment of memory (d) is often used in addition to psychotherapy for relatively mild disorders.
56. The tranquilizing drugs (a) cure behavior disorders (b) block the effects of certain chemicals which inhibit synaptic transmission (c) inhibit synaptic transmission (d) all of these
57. Your chances that you will at some time be a patient in a mental hospital are one in (a) 20 (b) 50 (c) 100 (d) 1,000
58. The largest group of patients in mental hospitals are (a) manic depressives (b) schizophrenics (c) arteriosclerotics (d) hysterics
59. A person who has to wash his hands every five minutes to avoid acute anxiety could be described as (a) a compulsive neurotic (b) schizophrenic (c) having a case of neurosthenia (d) psychopathic
60. Hysteria is characterized by (a) visual hallucinations and loss of memory (b) waxy flexibility and negativism (c) screaming and tantrums (d) delusions of grandeur and of reference
61. The basic personality structure of peptic ulcer patients is characterized by (a) bulimia (b) aggression (c) anorexia nervosa (d) ambition and hard-driving motivation
62. Personality disorders which have their bases in psychological rather than physiological functioning are referred to as (a) functional (b) organic (c) nervous (d) habitual
63. Which of the following is a psychotic mood disorder (a) manic-depressive psychosis (b) catatonic psychosis (c) hebephrenic psychosis (d) schizophrenia
64. Which of the following is not a general characteristic of schizophrenia (a) emotional dulling (b) withdrawal (c) mood swings (d) delusions
65. A psychotic patient in a hospital sees a ward attendant put a sleeping pill in his glass of milk and immediately thinks the attendant is trying to poison him. This would be called (a) a hallucination (b) a delusion (c) a phobia (d) a fugue

Matching Questions

Directions: Match Column B with Column A and place the number of your answer on the special answer sheet

Column A

66. Play therapy
67. Insight therapy
68. Directive techniques
69. Client-centered techniques
70. Psychoanalysis

Column B

- |  |  |
|--|--|
| <ol style="list-style-type: none"> <li>71. Emphasis on synthesis</li> <li>72. Emphasis on advice</li> <li>73. Emphasis on analysis</li> <li>74. Emphasis on reeducation</li> <li>75. Use of psychodrama</li> </ol> | <ol style="list-style-type: none"> <li>1. Transference essential</li> <li>2. Hypnosis essential</li> <li>3. Used chiefly with children</li> <li>4. Used chiefly with groups</li> <li>5. Aimed at uncovering causes of difficulty</li> <li>6. Minimum participation of therapist</li> <li>7. Control and reeducation</li> </ol> |
| <ol style="list-style-type: none"> <li>1. Riggs</li> <li>2. Meyer</li> <li>3. Directive therapy</li> <li>4. Insight therapy</li> <li>5. Freud</li> <li>6. Nondirective therapy</li> <li>7. Moreno</li> </ol>       |  |

True-false Questions

Directions: If the statement is true, write the letter "T" in the space provided on the answer sheet; if the statement is false, write the letter "F" in the space provided in the answer sheet.

76. The patient's freedom to talk is essential in nondirective therapy.
77. Convulsive shock is a typical example of psychotherapy.
78. At the present time, it appears that strictly medical treatment is inappropriate for psychological disorders.
79. Organic psychopathology is treated primarily by psychotherapy.
80. Even the mildly maladjusted can profit by psychotherapy.
81. Generally speaking, the neuroses respond better to treatment than the psychoses.
82. Psychotherapy is applicable only to the more serious cases of mental illness.
83. In simple adjustment problems, situational changes may be adequate to make the patient secure.

84. Supportive therapy involves a lengthy inquiry into the patient's past.
85. Much of what is called counseling is supportive psychotherapy.
86. Supportive and insight therapy are not mutually exclusive.
87. Most therapists consider it poor practice to attempt both supportive and insight therapy with the same patient.
88. Early psychiatric methods were highly directive.
89. Free association has become more important than hypnosis as a technique for uncovering repressed material.
90. Desensitization is the therapist's technique for removing the emotion associated with certain situations.
91. Suggestive therapy is superficial in that it relieves only symptoms.
92. Directive therapy is preferable where a deep and prolonged analysis is indicated.
93. It is a sign of a satisfactory therapeutic situation if the therapist does most of the talking.
94. Psychoanalysis is primarily a psychological theory.
95. The expression toward the therapist of attitudes previously expressed toward others is a feature of psychoanalysis known as rapport.
96. As long as the therapist's interpretation of a patient's problem is technically correct, there is no danger that the manner of presentation of the interpretation to the patient will make it ineffective.
97. Sigmund Freud advocated distributive analysis and synthesis.
98. In psychodrama, the audience may be made up of patients in psychotherapy.
99. The objective of therapy, according to Adolph Meyer, is a synthesis of the personality organization.
100. In play and release therapy, some limitation must be placed on freedom to play.

**APPENDIX I**

**JOB SHEET #8--TEST #8**

## INTRODUCTION TO PSYCHOLOGY

## Job Sheet #8

Vocational Adjustment

1. What are some of the difficulties involved in making a wise choice of a vocation? (References #1, #2, #3)
2. What is an aptitude? How are aptitudes classified? (References #4, #5, #6, #7, #8)
3. Name some scholastic-aptitude test and indicate their uses. (Reference #9)
4. How should vocational-aptitude test be chosen? What kinds of ability are measured by vocational-aptitude test? (References #10, #11)
5. Name and distinguish two vocational-interest tests. How are they scored and interpreted? (References #12, #13, #14, #15)
6. What is job analysis? How is it conducted? Of what use is it? (References #16, #17, #18)
7. What is job description? What information is necessary to write such a description? (References #19, #20)
8. What is a trade test? How is it distinguished from an aptitude test? (Reference #21)
9. What is a psychograph ? How many kinds are there? In what terms are psychographs expressed? (References #22, #23, #24)
10. Discuss the problem of validity in the selection of individuals for employment. (References #25, #26, #27, #28, #29)
11. Name and describe four functions of the supervisor? (Reference #30)
12. What is job evaluation? Describe different methods of making job evaluations (References #31, #32)

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INTRODUCTION TO PSYCHOLOGY  
(Evaluation)  
Job Sheet #8

Vocational Adjustment

1. The best example of the fact that working conditions may be more important than pay are (a) white-collar workers (b) college teachers (c) salaried workers (d) executives.
2. When workers rank pay as important to them, they want (a) higher rate of pay (b) high total pay (c) fair pay in comparison with other people (d) none of these.
3. Probably the most frequently mentioned factor in job satisfaction is (a) pay (b) working conditions (c) job security (d) short hours.
4. Only the financially privileged have a reasonable chance of completing the training for (a) college teaching (b) medicine (c) law (d) acting.
5. Which occupation is ranked higher than day laborer rank it? (a) physician (b) businessman (c) foreman (d) policeman.
6. The test which is most usually given to freshmen entering college is the (a) GRE (b) MAT (c) AGCT (d) ACE.
7. A test which serves both as an intelligence test and one of scholastic aptitude is the (a) AGCT (b) ACE (c) Graduate Record Examination (d) None of these.
8. The chances that an officer candidate with an AGCT below 110 would receive a commission were (a) 4 in 10 (b) 7 in 10 (c) 8 in 10 (d) 9 in 10.
9. The jobs which are least likely to require a vocational aptitude test specific to that job are (a) clerical jobs (b) jobs requiring psychomotor ability (c) managerial jobs (d) mechanical jobs.
10. A relatively unique factor is common to tests of (a) psychomotor ability (b) clerical ability (c) aptitude ability (d) mechanical ability.
11. To evaluate the ability of a test to select job applicants we must (a) give the test to all applicants (b) use the test to select applicants (c) test the successful applicant (d) none of these.
12. The Kuder test differs from the Strong, in that the Kuder was (a) empirically designed (b) rationally designed (c) measures aptitude (d) measures interest in specific vocations.

13. In choosing an employee for a job, the employer will want to use (a) general aptitude test (b) a specific aptitude test (c) an intelligence test (d) a scholastic aptitude test.
14. Two general approaches to developing tests of interest are (a) empirical and theoretical (b) practical and rational (c) scholastic and vocational (d) personal and social.
15. A grade of C on the Strong test indicates that an individual's interests agree with those of how many members of a professional group? (a) an average (b) most (c) few (d) virtually all
16. A student who took the Kuder Preference Record might be advised that (a) he has the interest of a social worker (b) he has the interests of a physician (c) he has low economic interests (d) he has high computational interests.
17. Moving pictures are best used in analyzing jobs that are (a) highly complex (b) impossible for expert job analyst to perform (c) highly repetitive (d) all of these.
18. Using motion pictures is the best method of job analysis for (a) repetitive jobs (b) job such as machinists and carpenters (c) hazardous jobs (d) executive jobs.
19. A job analysis consist of (a) seeing how jobs differ from each other (b) determining the qualifications for a job (c) testing the most frequent duties of a job (d) finding out what a job is.
20. A detail account of all the facts pertinent to a job is called (a) job analysis (b) job specification (c) worker analysis (d) worker specification.
21. The traits, interests, and abilities required for a job are known as (a) worker characteristics (b) job characteristics (c) job specification (d) worker specification.
22. Interviewing as a method of selecting applicants (a) usually gives reliable results (b) never is a valuable aid in selection (c) is not so good a selection device as its users think (d) none of these.
23. In order for an interviewer to be effective, it is necessary that he (a) interview a lot of people (b) have a pleasant personality (c) know the person being interviewed (d) know the job.
24. Check lists of traits used in modern letters of recommendation (a) force the rater to include all relevant information (b) overcome tendencies toward leniency (c) have the advantage of giving comparable rating to different applicants (d) make the recommendation a highly reliable source of information.

25. To select a plumber or carpenter; the most valid single instrument is (a) trade test (b) interview (c) application blank (d) aptitude test.
26. On the job psychography devised by the U.S. Employment Service (a) three grades of abilities are distinguished (b) the A grade is the amount possessed by the upper 10% (c) the B grade is the amount possessed by the upper 70% (d) none of these.
27. Face validity refers to validity (a) that has been demonstrated (b) that a test appears to have (c) that is the same thing as true validity. (d) that is sufficient for choosing a test.
28. The supervisor should communicate with his employees by (a) giving information in a few large doses (b) using technically correct language (c) telling what they should know when they should know it (d) leaving the problems of communication to professional writers.
29. A learning principle readily applied in vocational situations is (a) primary reinforcement (b) positive transfer (c) retro-active inhibition (d) whole versus part learning.
30. The purpose of job evaluation is to (a) evaluate a worker (b) evaluate the scarcity of a worker's ability (c) determine a job's market value (d) arrive at a fair wage.
31. Ratings on efficiency reports suffer from (a) too rigid categories (b) leniency (c) forcing of choices (d) too few categories.
32. Supervisor do not know how their ratings will turn out when they use (a) efficiency reports (b) man to man rating (c) force-choice techniques (d) rating reports.
33. The factor usually rated highest by industrial workers is (a) easy work (b) good hours (c) opportunity for advancement (d) steady work.
34. The basic factors in job satisfaction are (a) economic (b) physical (c) psychological (d) financial.
35. A personnel psychologist would least likely be concerned with (a) public opinion (b) job analysis (c) employment procedures (d) human relations problems in industry.
36. In which of these activities would a social psychologist be least likely to engage? (a) teaching (b) personal counseling (c) propaganda analysis (d) psychological warfare.
37. Human engineering is oriented toward (a) getting employees into the job which best suits them (b) adapting people to the design of equipment (c) adapting equipment to the "design" of people (d) making dials more legible for aviators.

38. A prerequisite for success in psychology is (a) a genuine interest in science (b) an I.Q. of at least 140 (c) training in mathematics through calculus (d) a genuine interest in human welfare.
39. The validation of vocational interest tests is based on (a) the stability of occupational choice (b) the responses of members of given occupations (c) very intensive interviews with occupationally successful people (d) the correlation between interests and kind of educational background.
40. In the future, it is likely that (a) psychologists will take a more important part in making social decisions (b) the number of psychologists in the U.S. will not increase (c) training requirements for professional psychologists will be lowered (d) the profession of psychology will combine with medicine.
41. The most important criticism of motion and time study is that it (a) disregards individual preferences about work (b) increases monotony (c) reduces piece rate in proportion (d) throws men out of work
42. Which of the following tests, if you could use only one, would you select for occupational selection and placement (a) intelligence test (b) personality test (c) interest test (d) projective test.
43. Romanticism with regard to work means that (a) a person bases his choice on the prestige of an occupation (b) a choice is made on the basis of the type of marital possibilities which exist (c) a choice is made on the basis of the kind of work involved in a job (d) essentially, a person is swept away by the excitement of his work
44. Vocational guidance aims to (a) find the occupation for which a man is best suited (b) find the best man for a certain job (c) step up the efficiency of a given industry (d) eliminate overcrowding in the professions
45. The number of psychologists in the A.P.A. in 1950 was about (a) 3,000 (b) 7,000 (c) 15,000 (d) 40,000
46. One of the main difficulties with vocational counseling is that (a) the subject is not motivated enough (b) the subject really knows what he wants to do and seldom will listen to any other proposals (c) the subject frequently needs help with personal difficulties which are not necessarily related to his vocational problems (d) few counselors know what tests to use

47. Approximately half the psychologists in the United States are employed by (a) colleges and universities (b) the federal government (c) business industry (d) guidance clinics.
48. The bulk of the research in "pure" problems of psychology is carried on by (a) experimental psychologists (b) psychologists in industry (c) social psychologists (d) statisticians
49. A clinical psychologist (a) is primarily interested in psychological measurement (b) is trained in diagnosis and psychotherapy (c) must have an M. D.
50. The vocational counselor should test interests, intelligence, and special aptitudes because (a) knowledge of all contribution (b) to a sound vocational choice (c) test scores on each are highly correlated (d) the candidate will not recognize the crucial part of the testing program
51. The correlation between the rankings of the social status of various occupations by graduate students and laborers is (a) rather low (b) only moderate (c) a little above average (d) quite high.
52. According to a study by Fortune magazine, approximately what proportion of individuals who were factory workers said they would choose a different trade or occupation if "they had it to do over again"? (a) 25% (b) 50% (c) 75% (d) 100%.
53. A crucial factor in conciliating union-management relations, from the psychologist's point of view, is (a) the presence of conflict (b) the motivational basis of the conflict (c) the incorrect belief about each other's beliefs (d) the similar aims of the two groups.
54. With respect to industrial organization, modern changes in production have resulted in (a) less association between workers and management (b) closer relations between workers and management (c) more personalized relations between worker and management (d) a stronger feeling of identification on the part of workers with the factory as an organization.
55. The basic factors in job satisfaction are (a) economic (b) physical (c) psychological (d) financial.
56. When workers rank pay as important to them, they want (a) higher pay with reference to rate (b) high total pay (c) (d) none of these.

Matching Questions

Directions: Match Column B with Column A and place the number of your answer on the special answer sheet.

Column A	Column B
57. Kuder	1. aptitude for officer candidate school
58. Strong	2. college interest
59. GRE	3. interests in vocations
60. ACE	4. college aptitude
61. AGCT	5. vocational aptitude
	6. interest in nine areas
	7. aptitude for graduate school
62. Critical incidents	1. used in job analysis
63. Forced choice	2. yields a man-to-man rating
64. Trade tests	3. has no face validity
65. Psychograph	4. used in evaluation of personnel
66. Interview	5. of little value in selecting personnel
	6. of great value in selecting personnel
	7. used in connection with worker characteristics

True-false Questions

Directions: If the statement is true, write the letter "T" in the space provided on the answer sheet; if the statement is false, write the letter "F" in the space provided on the answer sheet.

67. The day laborer ranks the businessman higher than the physician in social status.
68. Every occupational group includes people of superior intelligence.
69. There is no sharp line between aptitude and intelligence tests.
70. Aptitudes are clearly distinguishable from intelligence.
71. The chances that an officer candidate with an AGCT of 135 will obtain a commission are less than 6 in 10.
72. Only when the test results on criterion groups are more different than can be expected by chance is a test valid and worthy of use for selection purposes.
73. Once the validity of a test is proved, it is safe to use it in other similar situations.

74. There are only five reliable aptitude tests.
75. Success depends as much on interest as on ability.
76. Mechanical ability tests are highly correlated and involve a common factor.
77. Vocational interest tests also test vocational aptitude.
78. The Kuder Preference Record is scored by occupation.
79. A person taking the Strong Test must indicate his interests by marking whether he likes, dislikes, or is indifferent to an item.
80. A valid interest test usually gives a clear-cut answer to whether a person is fitted interest-wise to enter a vocation.
81. A job can best be analyzed by asking a person who is successful at it to describe it.
82. Most people who have worked a long time at a job can tell you exactly what the job entails.
83. All jobs having the same specification are considered to be the same job.
84. Worker characteristics include a statement of how important each trait or ability is to the job.
85. The application blank does not provide a measure of quality.
86. The interview is one of the best available predictors of job success.
87. Some interviewers are very poor judges of people.
88. A trade test measures a person's aptitude at his trade.
89. The individual psychograph represents traits and abilities required in a job.
90. Many procedures have face validity when they do not have true validity.
91. Most supervisors have had no training in supervision.
92. In complex situations, reinforcement is knowing the outcome of one's work.
93. The supervisor should remember that people usually master one thing at a time better than they master several things at a time.
94. Workers should be paid what they are worth, not according to the scarcity of skills required in a job.

95. The efficiency report is not satisfactory for most worker evaluation.
96. The force-choice technique yields far too many people "excellent."
97. Easy work is usually desired by workers than high pay.
98. According to surveys of workers, security is often considered more important than pay as a factor in job satisfaction.
99. Because the satisfaction of primary needs is most important to survival, this factor is most important to workers.
100. In wanting "opportunity for advancement," most workers want a guarantee of advancement.

**APPENDIX J**

**JOB SHEET #9--TEST #9**

## INTRODUCTION TO PSYCHOLOGY

## Job Sheet #9

Intelligence

1. What is a test? What factors must be considered in interpretation of a test? (References #1, #2, #3, #4, #5, #6)
2. What is a standard score? If a person's standard score is 70 when the mean is 50 and the standard deviation is 10, what does his score mean? (References #7, #8, #9, #10, #11, #12)
3. What is a standardization group? What are the important characteristics of a standardization group? (References #13, #14, #15, #16, #17)
4. Distinguish between intelligence tests and aptitude tests. (References #18, #19, #20)
5. Describe different types of intelligence tests. What are their respective advantages and limitations? (References #21, #22, #23, #24, #25)
6. Describe typical items on the Stanford-Binet Test (References #27, #28, #29)
7. How does one compute an MA from the Stanford Binet test? an IQ? (References #30, #31, #32, #33)
8. What are some intelligence test for adults? How do they differ in content and purpose? (References #34, #35, #36)
9. What methods have been used to study the nature of intelligence (References #37, #38, #39, #40)
10. Define mental deficiency and feeble-mindedness. What are the major classes of mental deficiency? (References #41, #42)
11. What are the three approaches to the study of gifted individuals? (References #43, #44, #45, #46, #47)
12. How does intelligence change with age? (Reference #48)

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| 8. Ruch, <u>op. cit.</u> , pp 95-97.        | 28. Sartain, <u>op. cit.</u> , p. 345.     |
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| 11. Bugelski, <u>op. cit.</u> , pp 176-177. | 31. Sartain, <u>op. cit.</u> , p. 347.     |
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| 15. Sartain, <u>op. cit.</u> , p. 346.      | 35. Ruch, <u>op. cit.</u> , pp. 109-115.   |
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| 17. Morgan, <u>op. cit.</u> , p. 387.       | 37. Ruch, <u>op. cit.</u> , pp 99-111.     |
| 18. <u>Ibid.</u> , p. 402.                  | 38. Morgan, <u>op. cit.</u> , p. 386.      |
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| 20. Sartain, <u>op. cit.</u> , pp. 373-374. | 40. Bugelski, <u>op. cit.</u> , p. 190.    |
| 21. Karn, <u>op. cit.</u> , Chap. 12.       | 41. Morgan, <u>op. cit.</u> , p. 388.      |
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| 25. Morgan, <u>op. cit.</u> , pp 378-388.   | 45. Sartain, <u>op. cit.</u> , pp361-363.  |
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INTRODUCTION TO PSYCHOLOGY  
(Evaluation)  
Job Sheet #9

Intellectual Abilities

**DIRECTIONS:** Select the correct answer and place the alphabet preceding your selection on the special answer sheet.

Multiple-choice Questions

1. The Stanford-Binet is probably the best intelligence test as yet devised because (a) of its standardization and directions for administration (b) it is the most simply and rapidly administered of the various intelligence tests (c) it is currently used more often than any other intelligence test (d) it is particularly suitable for adults.
2. Test norms are obtained by giving a test to a (a) normative group (b) reference group (c) standardization group (d) validation group.
3. In measuring abilities, we are interested in finding out (a) how a person compares with others in ability (b) how much ability a person has (c) how a person has developed his abilities (d) a person's unique set of abilities.
4. If we know the mean and standard deviation of a distribution, raw scores are expressed in terms of (a) standard deviations (b) standard scores (c) percentiles (d) all of these
5. If we have a very large standardization group for a test (a) it may be used for all purposes (b) it is permissible to use absolute scores (c) one group is as good as another (d) we need to know its characteristics.
6. The first scientific test of intelligence was devised by (a) Kellogg (b) Binet (c) Otis (d) Terman.
7. The Stanford-Binet test was adapted for use with American school children by (a) Stanford (b) Wechsler (c) Terman (d) Binet.
8. The Stanford-Binet test has (a) six subtests for each year of age (b) verbal and performance subtests (c) an IQ score for each subtest (d) a nonverbal quotient
9. A ratio of mental age to chronological age is known as (a) social maturity (b) mental maturity (c) intelligence quotient (d) achievement quotient.
10. The IQ measure is most appropriate to (a) infants (b) growing children (c) adults (d) all of these
11. The IQ is primarily a measure of (a) mental age (b) chronological age (c) rate of mental development (d) nonverbal intelligence.

12. The intelligence test least likely to be used with a large group is the (a) Stanford-Binet (b) Army Alpha (c) AGCT (d) Otis
13. A limitation of the Stanford-Binet test is that it (a) heavily weights performance factors (b) is a group test (c) gives an over-all score (d) gives only a performance.IQ.
14. The Stanford-Binet (a) is a group test (b) is an individual test (c) can be administered either to individuals or to groups (d) requires two people to administer it.
15. If you were given the task of making a thorough examination of the intelligence of a thirty year-old burlesque dancer, the best test to use would be the (a) Wechsler-Bellevue (b) Otis Mental Abilities Test (c) Stanford-Binet (d) AGCT.
16. The best individual test of adult intelligence is the (a) Stanford-Binet (b) AGCT (c) Otis (d) Wechsler-Bellevue
17. Expert testers are needed to administer (a) individual tests (b) group tests (c) both of these (d) neither of these.
18. The Otis Mental Abilities Test has been very popular with industry because (a) it is an easily administered individual test (b) it is the best of the group tests (c) it is a particularly sensitive test (d) it takes only 20 to 30 minutes to administer.
19. Series completions may be found in the (a) Otis test (b) Army Alpha (c) Wechsler-Bellevue (d) Army Beta.
20. The statistical technique which consists of computing correlations between tests or subtests in order to cluster those with high correlations together is called (a) inferential statistics (b) multiple correlation (c) factor analysis (d) cluster correlation.
21. An individual who has a mental age of six and a chronological age of ten would be classified as being (a) a genius (b) an imbecile (c) a moron (d) an idiot.
22. The percentage of the population with IQs over 120 is (a) 1 (b) 5 (c) 12 (d) 20.
23. Feeble-mindedness refers to an individual's subnormal (a) IQ (b) mental age (c) social age (d) general ability to make an adjustment in the world.
24. The Social Maturity Quotient is the ratio of the social age to the (a) IQ (b) chronological age (c) mental age (d) social maturity.
25. An idiot will never attain a mental age of greater than (a) four years (b) eight years (c) twelve years (d) sixteen years.
26. Secondary feeble-mindedness is due to (a) inheritance (b) biological defect (c) poor environment (d) none of these.

27. Of Terman's group of gifted children (a) more than half came from the working classes (b) about a third came from the professional classes (c) more than half were very successful (d) 700 held responsible managerial positions.
28. In studying children with IQs over 140, Terman found that (a) one-third came from working class homes (b) none was a criminal (c) about 20 percent ended up listed in indices of prominence like "Who's Who" (d) the most successful tended to be emotionally maladjusted.
29. It has been found that, in general, geniuses (a) are of small stature (b) keep to themselves (c) are more poorly adjusted (d) have good physical appearance.
30. Women excel men in (a) numerical ability (b) quick and precise movements (c) spatial comprehension (d) perception of spatial relationships.
31. Men tend to be better than women on (a) quick movements (b) numerical problems (c) perception of detail (d) making accurate movements.
32. Differences between men and women on intellectual factors are (a) small compared to individual differences (b) large compared to individual differences (c) due to heredity (d) general, rather than specific.
33. Men are inferior to women in (a) mechanical ability (b) perception of spatial relationships (c) numerical ability (d) quick movements.
34. In giving large groups the AGCT during the Second World War, it was found that (a) there were people in every occupation who scored over 130 (b) most occupations did not overlap very much (c) everybody in some occupations scored over 100 (d) salesmen were near the bottom.
35. After the age of sixteen to twenty, there is a decline in (a) vocabulary (b) verbal items (c) general information (d) ability to adapt to new situations.
36. In comparing IQs of children of different occupational groups, it was found that (a) children of the less intelligent tend to improve as they grow older (b) differences in groups are just about the same at all ages (c) children of the more intelligent tend to improve as they grow older (d) none of these.
37. Rural children do not score as well on intelligence tests as urban children because (a) brighter families migrate to the city (b) intelligence tests are not culture free (c) the stimulating environment of the city raises substandard intelligence (d) all of these.
38. Our conclusion about intellectual differences between races is (a) they are inherited (b) they are a matter of cultural environment (c) they are both inherited and acquired (d) they do not exist.
39. The lower boundary of IQ for the class of people called geniuses is usually considered to be (a) 120 (b) 130 (c) 140 (d) 150.

40. In his follow-up study of children with an IQ above 140, Terman found that  
 (a) about as many gifted children came from underprivileged homes as from privileged homes  
 (b) all the gifted children became superior adults  
 (c) those who became failures usually had emotional problems  
 (d) gifted children were no more successful than superior children.

### Matching Questions

Directions: Match Column B with Column A and place the number of your answer on the special answer sheet.

#### Column A

41. Stanford-Binet
42. AGCT
43. Otis
44. Wechsler-Bellevue
45. Vineland Scale

#### Column B

1. Group intelligence test often used in civilian vocational situations.
2. Group intelligence test especially designed for children
3. Yields a social maturity quotient
4. Intelligence test designed and used by the military services
5. Individual intelligence test standardized on both children and adults.
6. Individual intelligence test standardized on children and adolescents
7. Individual intelligence test standardized on adults.

46. Army Alpha
47. Army Beta
48. Stanford-Binet
49. Thurstone

1. Group intelligence test
2. Used in Second World War
3. Adult individual test
4. Primary mental abilities
5. Individual test for children
6. Scholastic aptitude test
7. Test for illiterates

- |  |  |
|--|--|
| 50. Army Beta                                  | 1. Can be self-administered                          |
| 51. Otis                                       | 2. Can give the verbal and performance IQ separately |
| 52. Stanford-Binet                             | 3. Is used primarily for children                    |
| 53. Wechsler-Bellevue                          | 4. Is a nonverbal performance test                   |
| 54. NGCT                                       | 5. Is both a group and an individual test.           |
|  | 6. Has an average score of 50.                       |
|  | 7. Is a good predictor of scholastic achievement.    |
|  |  |
| 55. Terman                                     | 1. First real intelligence test                      |
| 56. Binet                                      | 2. Group intelligence test                           |
| 57. Wechsler                                   | 3. Test of specific factors in intelligence          |
| 58. Otis                                       | 4. Individual test of adult intelligence             |
| 59. Vineland                                   | 5. Stanford-Binet Test                               |
|  | 6. Social maturity scale                             |
|  | 7. Vocational interest test                          |
|  |  |
| 60. Is used in industrial situations.          | 1. Otis Mental Abilities Test                        |
| 61. Was first used in the First World War.     | 2. Army Alpha  |
| 62. Tends to weight verbal abilities.          | 3. AGCT  |
| 63. Has separate tests for children and adults | 4. Stanford-Binet                                    |
|  | 5. ACE   |
|  | 6. Kuder-Preference Test                             |
|  | 7. Wechsler-Bellevue                                 |
| 64. Taken by students entering college.        |  |

### True-False Questions

Directions: If the statement is true, write the letter "T" in the space provided on the answer sheet; if the statement is false, write the letter "F" in the space provided on the answer sheet.

65. A single score on a new test has no real value until it is related to the norms for the test.
66. A test is a sample of tasks.
67. Test norms may not be expressed as percentiles.
68. Aptitude tests are frequently used to measure intellectual abilities.
69. The Binet test was originally used in France.

70. The Binet tests must be administered to individuals, and are not suited for simultaneous administration to a group.
71. The IQ may be thought of as the relative rate at which intellectual functions develop.
72. The average IQ in the population is 100 because of the way the tests were made up.
73. The average IQ as measured by the Stanford-Binet test is 100.
74. Because of its constancy, the IQ may be considered a rate of mental growth.
75. The Stanford-Binet test may be given to groups.
76. One feature of the Wechsler-Bellevue test not possessed by the Stanford-Binet is that it is specifically designed for adults.
77. The AGCT was developed for the purpose of testing recruits in the First World War.
78. A group test usually requires props.
79. The administration of a group test does not necessarily require an experienced tester.
80. Factor analyses of intelligence tests indicate that intelligence is a single general ability.
81. Individuals with IQs from about 10 to 20 are called morons.
82. Morons are the lowest group of the mentally deficient on the IQ scale.
83. A person with an IQ of less than 20 is classified as a moron.
84. Intelligence tests are not culture free.
85. Mental deficiency and feeble-mindedness refer to the same thing.
86. For people with low mental ages, the social age is generally higher than the mental age.
87. There is no known treatment for primary feeble-mindedness.
88. There is usually a known organic basis for cases of familial feeble-mindedness.
89. Whenever we find a case of feeble-mindedness, we will find that trait in other members of that individual's family.
90. At present, most cases of feeble-mindedness are not treatable.
91. The presence of three murderers among the geniuses studied by Terman is proof that these 1,500 individuals were no more successful than less bright person.

92. Gifted children tend to be model students.
93. Women excel men in verbal ability.
94. The very bright child often gets in trouble because his teachers aren't as bright as he is.
95. In verbal ability, 40 percent of the males are superior to 50 percent of the females.
96. Psychological research has clearly demonstrated that differences in abilities between males and females are due to environmental differences rather than heredity.
97. Abilities which increase with experience are the first to decline as a result of age.
98. The intelligence of adopted children correlates best with the educational level of their foster parents.
99. The fact that the IQ can be raised by improving the environment proves that intelligence is largely environmentally determined.
100. The most important factor in determining IQ is heredity.

**APPENDIX K**

**FINAL TEST**

## INTRODUCTION TO PSYCHOLOGY

(Final Evaluation)

Inventory Type Review Test

DIRECTIONS: Select the correct answer and place the alphabet preceding your selection on the special answer sheet.

Multiple-choice Questions

1. The behavioral sciences include the study of (a) philosophy (b) chemistry (c) economics (d) physics
2. The behavioral science that studies primitive, illiterate cultures is (a) anthropology (b) sociology (c) ecology (d) geography.
3. One of the reasons psychology is a science is that (a) it studies the mind (b) it makes measurements of behavior (c) it uses speculations (d) it has many practical applications.
4. Which of the following is not always essential in science (a) research (b) theory (c) systematic facts (d) measurement.
5. Historically, opposition to scientific investigation was overcome first for one subject, then for another. Which subject is out of order? (a) physics (b) biology (c) psychology (d) chemistry.
6. Gestalt psychology (a) was founded by a German psychologists (b) contends that atoms form gestalts (c) emphasized phenomena of perception and insight (d) displaced behaviorism in the United States.
7. Public-opinion polling is an example of (a) the survey method (b) the clinical method (c) the experimental method (d) the method of natural observation.
8. An important value of the theoretical approach is that it is (a) always correct (b) a guide for research (c) highly acceptable in the business (d) eliminate controversy.
9. The science of psychology is concerned with the study of (a) overt behavior (b) overt implicit behavior (c) conscious and unconscious events (d) all of these.
10. A psychologist who analyzed experience in terms of sensations, images, and feelings would be using (a) psychoanalysis (b) functionalism (c) introspectionism (d) none of these.
11. Another name for "arm-chair theorizing" is (a) phrenology (b) control of variables (c) a priori reasoning (d) human engineering.

12. The period of the embryo ends how long after conception? (a) 24 hours (b) 2 weeks (c) 2 months (d) 7 months.
13. Nine days after conception, the human individual consists of (a) one cell (b) a ball of identical cells (c) many differentiated cells (d) a ball having three layers.
14. A sperm contains (a) 24 chromosomes (b) 48 chromosomes (c) 48 pairs of chromosomes (d) millions of chromosomes.
15. Chromosomes (a) have never been seen (b) are smaller than genes (c) always are found in pairs (d) 24 in number in animals.
16. Genes (a) are the basic units of heredity (b) are complex chemical packets (c) direct the formation of every part of the body (d) all of these
17. X chromosomes differ from Y chromosomes in that X chromosomes (a) are larger (b) are smaller (c) determine sex (d) none of these.
19. Which of the following is a sex-linked characteristic? (a) colorblindness (b) baldness (c) hemophilia (d) all of these.
20. An egg fertilized (a) by an X sperm produces a girl (b) by a Y sperm produces a boy (c) both of these (d) none of these.
21. Identical twins are the result of (a) the simultaneous fertilization of two eggs (b) the fertilization of one egg by two sperm (c) the splitting of the fertilized egg (d) none of these.
22. Identical twing result from the fertilization of (a) one egg by one sperm (b) two eggs by one sperm (c) one egg by two sperm (d) two eggs by two sperm.
23. When a need has been satisfied, the organism exhibits (a) striving (b) an internal imbalance (c) relief (d) instrumental behavior.
24. A lack of deficit within the individual is (a) homeostasis (b) a goal (c) a need (d) an instinct.
25. The cycle of biological motivation usually starts with (a) consummatory behavior (b) bodily lack of deficit (c) goal-directed activity (d) instrumental behavior.
26. The sequence hunger: bar pressing: food refers to (a) experiments in classical conditioning (b) the motivational cycle (c) frustration of drive (d) secondary goals.
27. Physiological needs are (a) derived and learned (b) basic and innate (c) basic and learned (d) none of these.
28. Warmth, cold, and pain (a) are separate senses (b) are physiological drives (c) have similar physiological mechanism (d) all of these.

29. The boy with the abnormal adrenal gland died because (a) he could not get enough salt (b) he ate too much salt (c) he hated sweet things (d) None of these
30. An example of homeostasis is (a) a body temperature of 101 degrees (b) high CO<sub>2</sub> level in the blood immediately after exercise (c) maintenance of body mineral content (d) all of these.
31. It is thought that the mechanism for thirst is (a) dryness at the back of the mouth (b) water in the stomach (c) deficit of water in cells of the thirst center (d) loss of salt.
32. The most important factor in thirst is (a) dehydration of body cells (b) the contents of the stomach (c) dryness of the mouth and throat (d) none of these.
33. Immediately after placing water in the stomach of a fistulated dog, the animal (a) continues to drink (b) drinks more slowly (c) ceases to drink (d) is nauseated by water.
34. In stimulus generalization, the more similar the testing stimulus and the conditioned stimulus (a) the greater the response (b) the less the response (c) the better the discrimination (d) the poorer the discrimination.
35. When a stimulus similar to the conditioned stimulus elicits the conditioned response, the phenomenon is called (a) secondary reinforcement (b) partial reinforcement (c) response generalization (d) stimulus generalization.
36. In order to acquire a response, an animal must have (a) a conditioned stimulus (b) an unconditioned stimulus (c) reinforcement (d) instrumental response.
37. Presenting the conditioned stimulus alone results in (a) reinforcement (b) generalization (c) reinforcement (d) instrumental response.
38. The simplest example of learning is (a) the unconditioned response (b) the conditioned response (c) the conditioned stimulus (d) the instrumental response
39. Classical conditioning is most important in the learning of (a) lever pressing (b) fear (c) complex skills (d) maze running.
40. The simplest kind of learning in the higher animals (such as mammals) is called (a) conditioning (b) discrimination (c) insight (d) preceptual learning.
41. A conditioned response is acquired (a) presenting the unconditioned stimulus alone for several trials (b) pairing the unconditioned stimulus and conditioning stimulus (c) pairing the unconditioned stimulus and unconditioned response (d) presenting the conditioning stimulus alone for several trials.

42. The principle of reinforcement implies that (a) responses are acquired only if they are reinforced (b) without reinforcement, responses decline and are extinguished (c) reinforcement is essential to learning (d) all of these.
43. The primary drawback to a description of personality in terms of traits is that (a) it presents too simple a picture (b) it lumps together a number of types (c) it does not allow for individual behavior patterns (d) it overlooks the motive underlying behavior.
44. Extroverts and introverts are examples of (a) traits (b) types (c) habitual responses (d) none of these.
45. The number of traits which have been fairly well established by factor analysis is about (a) 3 (b) 12 (c) 80 (d) 5,000
46. The primary purpose of factor analysis of a large number of traits is to (a) discover underlying motives (b) discover additional traits (c) develop a smaller number of basic traits (d) collect traits into types.
47. The most fruitful level at which to study personality is probably the (a) trait level (b) type level (c) specific-response level (d) test level
48. Which of the following is a useful personality characteristic? (a) works for a living (b) has his hair cut by a barber (c) goes to school (d) has well-kept appearance.
49. The unabridged dictionary contains about how many adjectives to describe how people act, think, perceive, feel, and behave? (a) 2,000 (b) 8,000 (c) 18,000 (d) 50,000
50. The emphasis in the study of personality is on (a) consistency of behavior (b) individual acts (c) group performance (d) none of these.

### Matching Questions

Directions: Match Column B with Column A and place the number of your answer on the special answer sheet.

#### Column A

51. Wilhelm Wundt  
52. William James  
53. John Dewey  
54. John B. Watson  
55. Sigmund Freud

#### Column B

1. University of Leipzig  
2. John Hopkins University  
3. Harvard University  
4. Functionalism  
5. Psychoanalysis  
6. Behaviorism  
7. Gestalt Psychology

Column AColumn B

- |                         |                                      |
|-------------------------|--------------------------------------|
| 56. Functional Autonomy | 1. Maternal Behavior                 |
| 57. Repression          | 2. Unconscious motives               |
| 58. Value               | 3. Affiliative need                  |
| 59. Prolactin           | 4. G. W. Allport                     |
| 60. Prestige            | 5. Learned goal                      |
|                         | 6. Status need                       |
|                         | 7. Dependency                        |
| 61. Pain avoidance      | 1. Physiological goal                |
| 62. Lever pushing       | 2. Physiological need                |
| 63. Companionship       | 3. Social value                      |
| 64. Sexual morality     | 4. Instinctive behavior              |
| 65. Sexual partner      | 5. Instrumental behavior             |
|                         | 6. Learned need                      |
|                         | 7. Biochemical homeostatic mechanism |
| 66. Folkways            | 1. Transmitter of values             |
| 67. Mores               | 2. Superstition                      |
| 68. Institutional ways  | 3. Acquired fear                     |
| 69. Taboos              | 4. Sex customs                       |
| 70. Language            | 5. Incest                            |
|                         | 6. Laws                              |
|                         | 7. Little social courtesies          |
| 71. At birth            | 1. Disgust                           |
| 72. 0-3 months          | 2. Distress                          |
| 73. 3-6 months          | 3. Jealousy                          |
| 74. 6-9 months          | 4. Affection for children            |
| 75. 8-12 months         | 5. Affection for adults              |
|                         | 6. Excitement                        |
|                         | 7. Elation                           |

Column AColumn B

- |                |  |
|----------------|--|
| 76. Anger      | 1. Need satisfaction                   |
| 77. Fear       | 2. Maternal instinct                   |
| 78. Aggression | 3. Strange stimulus                    |
| 79. Pleasure   | 4. Insecurity or motivational conflict |
| 80. Laughter   | 5. Restraint                           |
|                | 6. Incongruous situation               |
|                | 7. Frustration                         |

True-False Questions

Directions: If the statement is true, place the letter "T" in the space provided on the answer sheet; if the statement is false, place the letter "F" in the space provided on the special answer sheet.

81. Human beings develop different emotional patterns strictly through learning.
82. Early emotional development proceeds according to a maturational schedule.
83. The galvanic skin response is a sensitive indicator of emotion.
84. Society is usually responsible for an individual's acquiring so many fears.
85. Fear of a parent may generalize to all authority figures.
86. Organisms cannot learn when fear is the motive.
87. All one's social values and traditions are learned.
88. Maze learning may be regarded as "stupid" learning.
89. Punishment is never effective in eliminating undesirable behavior.
90. Much of the perception of objects is unlearned.
91. Contour is the same as shape.
92. Convergence is a monocular cue for depth perception.
93. A polygon presents the same information as a histogram.
94. Physical sciences usually deal with zero correlations.
95. A normal distribution is a frequency polygon.
96. In order to have a ratio scale, zero must be known.
97. In any kind of mathematics, 1 plus 2 equals 1.
98. Pencils and paper tests are easy to fake.
99. The patient's freedom to talk is essential in nondirective therapy.
100. Early psychiatric methods were highly directive.