"A COMPARISON OF TWO TYPES OF SUPERVISED STUDY RECITATION."

by

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Southwestern College, 1920

Submitted to the Department of Education and the faculty of the Graduate School of the University of Kansas in partial fulfillment of the requirements for the degree of Master of Arts.

Approved by:

[Signatures]

July 1929
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INTRODUCTION.

Supervised study, an innovation in school procedure, was introduced in the schools of Batavia, New York, by Superintendent J. Kennedy in 1899. A little later, experimental investigation, together with much dissatisfaction with the home study problem, aroused interest in the movement. More recently an attempt to solve the problem of individual differences has led to the adoption of some form of supervised study in high schools of all parts of the country. Educational literature contains much concerning this method of instruction.

Supervised study is commonly referred to as though it were a single, unvarying method of school practice, with the assumption that the results obtained will be the same whenever and wherever the plan is adopted. Investigation indicates that this is an erroneous assumption. Brownell, in his study reports fourteen types of supervised study procedure that may be classified separately. In fact it is difficult to find record of any group of schools that follows exactly the same procedure. A few studies have been made in an attempt to evaluate these teaching

methods labeled "Supervised Study". In some instances the supervised study recitation has been found superior to the conventional recitation. However, very little has been done to measure objectively the results obtained through the various uses of the longer period which is commonly used under the supervised study plan. The need for these studies is reflected in the statements of such authorities as Brueckner who says: "There is need of evaluating objectively the results secured with supervised study under varying conditions." Shreves also writes: "It would seem wise, therefore, to recommend that every teacher and school employ a definite plan of supervised study and farther, that the standard tests and measurements be employed to measure and determine the effectiveness of such directed study."

With the adoption of the sixty minute recitation period in his school the writer became interested in this problem. The question that naturally presented itself was: Which of these numerous procedures known as supervised study will work best in a given situation? The experiment herein reported is an attempt to answer this question.

SUMMARY OF EXPERIMENTS WITH SUPERVISED STUDY.

Very little has been done in the way of scientific experimentation to determine which of the numerous types of supervised study recitation is best. A number of experiments have been performed in an attempt to compare the value of the supervised study period with the shorter conventional recitation period. There follows here a review of the experiments that have been performed in the field of supervised study. Some of these compare supervised study technique with other techniques, while a few attempt to show the superiority of one use of the longer period over another.

The first controlled experiment applied to supervised study technique was conducted in the University High School of the University of Chicago in 1912. Breslich divided a mathematics class into two groups on the basis of their mathematics grades the preceding semester. It was assumed that these groups were of nearly equal ability. During a period of fourteen weeks the control group recited during a 45 minute period and prepared their assignments either later in the day or by home study. Throughout this same period the experiment group also used a 45 minute period but no home work was assigned. The time ordinarily used in assigning and discussing home work was used for supervised study. In this school, as a rule, the teacher had used

the greater part of the period for discussion of the assigned home work. At the close of the experiment it was found that the average grade of the directed group was slightly higher than that of the control group. It was also found that the poorer pupils had profited most under the supervised study plan. At the close of a fourteen week period the procedure was reversed and work on operations in fractions was covered in six lessons. The group with the longer training under supervision still showed considerable advantage over the other group.

A little later, Minnich\(^2\) conducted an experiment in mathematics at Bloomington, Indiana, with a group of 36 geometry students. They were divided into two equated groups on the basis of their grades for the preceding semester. The control group recited one period and prepared their lessons in the study room or at home. The experiment group recited one period but remained the following period to prepare their next assignment under the supervision of the instructor. A number of tests were given throughout the course of the experiment and a record kept of daily recitations. The supervised group surpassed the unsupervised. In only two of the fifteen weeks was the supervised group excelled.

About 1918 Frederick S. Breed conducted an experiment in co-operation with fourteen high schools in Michigan and Minnesota. In each school classes in 9th grade Latin, Algebra, or English composition were equated into two groups by means of previous marks and tests. Fifty minute periods were used. In the experiment group 30 minutes were given over to recitation and 20 minutes to directed study. In the control group the full 50 minute period was given to recitation. No special instruction regarding study was given this group. At the end of six weeks the procedure was reversed. Breed's conclusions as stated by him were: "On the basis of average results for the whole classes, supervised study of the type tested was slightly less efficient in first year algebra, was much less efficient in 9th grade English and was much more efficient in first year Latin."

In 1922 Heckert reported an experiment conducted in the 9th grade of William McGuffey high school at Miami University. A class in English composition was divided into two equated groups on the basis of the National Intelligence Test. Preliminary tests in English

composition were given and rated by the Thorndike-Hillegas scale. The two groups were taught by the same teacher and each group worked 25 periods of one hour each. Two tests were given to find out what improvement had been made. The median gain for the supervised group was eight per cent on initial ability with a median deviation of 6.5. The median gain of the unsupervised group was three per cent and the median deviation was 6.62. The bright pupils gained 4.8 per cent as compared with 1.66 per cent for corresponding members of the unsupervised group. Slower members of the supervised group improved 4.27 per cent while corresponding unsupervised pupils improved 2.72 per cent. Heckert concludes: "Supervised study in English composition is eminently worth while when teachers are able to direct children's efforts intelligently."

An experiment reported by Edington in 1923 was carried on in a group of Ohio schools in each of which at least one pair of classes was taught the same subject by the same teacher. One of the classes in each pair was taught six weeks by a supervised study technique and during the same period the other class was taught in the usual way. At the end of six weeks the procedure was reversed for another six weeks. In each pair of classes the initial scores were approximately the same. The results were as follows: In beginning Latin, Pressey Latin Syntax tests being used to

show progress there was a gain of 3.1 per pupil in the supervised class and a gain of 1.4 per pupil in the unsupervised class. Two other classes using Henmon's Latin test No. 1 showed 39 points gain for supervised group and 49.1 gain for the unsupervised. Four Caesar classes used Ullman-Kirby Latin comprehension tests. The supervised group gained 5.4 per pupil and the unsupervised group 4.58 per pupil. Eight English classes using Charter's Diagnostic language and grammar tests showed a pupil gain of 3.3 for language and 4.8 for grammar in the supervised group and 2.7 for language and 2.7 for grammar in the unsupervised groups. Two United States History classes using Barr's diagnostic test showed a gain of 6.2 per pupil in the supervised group and 3.8 in the unsupervised. Four algebra classes using Hotz algebra scales showed a pupil gain of 4.4 in the supervised groups and 2.6 in the unsupervised.

Beauchamp conducted an experiment in directed study in physical science in 1921-1922 in the University of Chicago High School. He equated groups on the basis of size of class, age, intelligence, rate of silent reading and ability to interpret the material read. The only variable permitted was that of instruction in how to study.

The experiment was divided into parts covering units of work. Time spent in study, amount of material covered, the tests and the oral presentation of the teacher were the same for both groups. The experiment group received instruction in how to study that the control group did not receive. Beauchamp found only a small but consistent gain in favor of the group with directed study.

Brown and Worthington report a co-operative study conducted by them in five Wisconsin high schools. A total of seven classes in algebra, English and history were used. Teachers' marks, intelligence scores, or intelligence scores and the Thorndike-McCall Reading Scale were used in pairing the groups. The control group used a 45 minute period of the usual recitation type. The experiment group had a class period of 60 minutes in which the supervised study plan was employed. Teachers were instructed to use approximately 20 minutes for discussion, review, examination, etc., 15 minutes for assignment, and 25 minutes for working out the new problem. They conclude:

"... two pairs, algebra classes, showed rather definitely that greater progress was made in the supervised study groups; four pairs showed slight variation in progress, favorable to supervised study and one pair of United States

History classes in school A indicated that the recitation plan was superior as a method of instruction." In this experiment the principals, teachers, and pupils favored the supervised study plan.

In 1926 White made an investigation in an attempt to show the effect of supervised study in Kansas high schools upon success in making grades in the University of Kansas. He found that the cases studied indicated only a very slight advantage for the supervised study group.

STATEMENT OF THE PROBLEM

This experiment was conducted in an attempt to determine the relative value of two types of supervised study recitation. Classes in Algebra, Freshman English, Sophomore Literature and Junior Literature were each divided into two equated groups. These are designated as control and experiment groups.

In the control group the instructor conducted recitation an average of forty minutes of the sixty minute period. The remaining time was used for study under the direction of the teacher. This is a common technique in the use of the sixty minute period.

In the experiment group the instructor was, in each instance, limited to an average of twenty minutes for assignment of lesson, explanation of new problems and for dealing with matters that could be of profit to the entire group. The remaining forty minutes was then used for study under the immediate supervision of the instructor. Individual help was given whenever needed. The instructor was not forbidden to question the group during the twenty minute period in attempting to present a clear understanding of the problem under consideration. This plan of using a limited time at the beginning of the period for explaining and outlining problems applicable to all
students is similar to the procedure inaugurated by Superintendent Search in the Pueblo Plan.

The question this experiment seeks to answer is this: Under which of the above supervised study recitation plans will high school students in Algebra, Freshman English, Sophomore Literature, and Junior Literature learn the most subject matter as measured by objective tests?

METHOD OF PROCEDURE.

This experiment was conducted during the second semester of the school year 1928-1929 in the Valley Center, Kansas, High School. The experiment extended over seventeen weeks. The classes used were First Year Algebra, Freshman English, Sophomore Literature, and Junior Literature. The first step was that of selecting two equivalent groups from each of these classes. The groups were made as nearly equal as possible on the basis of (1) mental age, (2) size of group, and (3) year of the students in the high school course.

The week before the close of the first semester Form A of the Otis Group Intelligence Scale was administered to the students of these classes. By means of these tests and the norms given, the mental age in months of each student was determined. The students were then paired on the basis of this mental age. The mental scores of those participating in the experiment are tabulated in tables I, II, III, and IV. Table I lists the mental ages in months of the control and experiment groups in algebra. For the control group the mean mental age is 199.61 months, with a standard deviation of 19.75 and a range of 158-225 months. For the experiment group the mean mental age is also 199.61 months with a standard deviation of 21.05 and 1. See Appendix.
a range of 152-222 months.

Table II presents the mental ages of the two groups in Freshman English. In the control group the mean mental age is 202.13 months with a standard deviation of 18.10 and a range of 159-223. In the experiment group the mean mental age is 200.88 months with a standard deviation of 18.60 and a range of 160-222.

In table III are found the mental ages of the sophomore literature groups. The mean mental age for the control group is 203.33 months with a standard deviation of 15.90 and a range of 176-229. In the experiment group the mean mental age is 203.88 months with a standard deviation of 15.60 and a range of 173-234.

Table IV presents similar data for the junior literature classes. The mean mental age for the control group is 214.92 months with a standard deviation of 12.85 and a range of 182-230. In the experiment group the mean mental age is 214.21 months with a standard deviation of 13.45 and a range of 180-230.

In algebra three new students were admitted to the classes during the semester while six withdrew from school. Three new students enrolled in Freshman English and six moved out of the district. In Sophomore Literature one entered during the semester and two left school while in Junior Literature classes one new student was added. In
no instances were new or withdrawn students considered in the experiment. Due to sickness at the beginning of the semester a number were absent for such a length of time that they could not be used in the experiment. There were also some in each class who could not be paired because of extreme or varied mental scores. As a result the experiment deals with the following number in each section: Algebra 18, Freshman English 16, Sophomore Literature 18, and Junior Literature 14.

As to the year in the high school course of the students in the various sections the following facts obtained: In the Algebra groups all were 9th grade students in their first year of high school except one Junior in the control group and two Sophomores in the experiment group. All of these were taking algebra for the first time. All students in Freshman English were in their first year of high school. In Sophomore Literature all students of both groups were in their second high school year except one from each group who was in his third year. In Junior Literature all were in their third year of high school.

The same text books and library materials were available to both sections of each class. The same instructor was used for both sections of each class
Three instructors were involved in the experiment. One in Algebra, one in Sophomore Literature, and one in Freshman English and Junior Literature. These instructors co-operated in the experiment to the fullest extent, followed instructions carefully, and administered the two types of recitation impartially. No special training in how to study was given either group.

After the groups were equated, initial objective tests were given the pupils of the various classes as follows: Algebra, Form A of the Columbia Research Bureau Algebra Test; Freshman English, Form I of the Barrett-Ryan English Test; Sophomore and Junior Literature, Form A of the Barrett-Ryan Literature Test. At the close of the experiment equivalent forms of the same tests were administered. The difference between the score on the initial test and the score on the final test is recorded as the gain. The total gain of the control group in each class was then compared with the total gain of the experiment group by use of the difference and sigma difference of the means of the two groups. The effectiveness of the two methods of instruction as measured by these tests was thus determined.

1. See Appendix
TABLE I

MENTAL AGE IN MONTHS, MEAN MENTAL AGE AND STANDARD DEVIATION FOR CONTROL AND EXPERIMENT GROUPS IN FIRST YEAR ALGEBRA.

<table>
<thead>
<tr>
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<td>L. Mc.</td>
</tr>
<tr>
<td>225</td>
<td>222</td>
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<td>223</td>
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<td>K. G.</td>
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<tr>
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<td>219</td>
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<tr>
<td>R. B.</td>
<td>H. B.</td>
</tr>
<tr>
<td>216</td>
<td>214</td>
</tr>
<tr>
<td>R. R.</td>
<td>P. G.</td>
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<td>213</td>
<td>214</td>
</tr>
<tr>
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<td>M. H.</td>
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<td>214</td>
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<tr>
<td>A. R.</td>
<td>M. R.</td>
</tr>
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<td>210</td>
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<td>R. M.</td>
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<td>209</td>
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<td>160</td>
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<td>D. M.</td>
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<td>158</td>
<td>152</td>
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18 Number in Group 199.61 Mean Mental Age 199.61
19.75 Standard Deviation 21.05
158-225 Range 152-222
### TABLE II

MENTAL AGE IN MONTHS, MEAN MENTAL AGE AND STANDARD DEVIATION FOR CONTROL AND EXPERIMENT GROUPS IN FRESHMAN ENGLISH.

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<tr>
<td>M. H. 214</td>
<td>P. G. 214</td>
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16 Number is Group
16
### TABLE III
MENTAL AGE IN MONTHS, MEAN MENTAL AGE AND STANDARD DEVIATION FOR CONTROL AND EXPERIMENT GROUPS IN SOPHOMORE LITERATURE.

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<td>H. Mc.</td>
</tr>
<tr>
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<td>D. F.</td>
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<td>M. K.</td>
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<td>Range</td>
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18 Number in Group 18
203.83 Mean Mental Age 203.88
15.90 Standard Deviation 15.60
176-229 Range 173-234
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<td>213</td>
<td>211</td>
</tr>
<tr>
<td>O. F.</td>
<td>R. K.</td>
</tr>
<tr>
<td>211</td>
<td>211</td>
</tr>
<tr>
<td>G. R.</td>
<td>B. B.</td>
</tr>
<tr>
<td>209</td>
<td>209</td>
</tr>
<tr>
<td>I. R.</td>
<td>F. F.</td>
</tr>
<tr>
<td>208</td>
<td>206</td>
</tr>
<tr>
<td>E. E.</td>
<td>R. S.</td>
</tr>
<tr>
<td>191</td>
<td>191</td>
</tr>
<tr>
<td>V. B.</td>
<td>R. F.</td>
</tr>
<tr>
<td>182</td>
<td>180</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number in Group</th>
<th>14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Mental Age</td>
<td>214.92</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>12.89</td>
</tr>
<tr>
<td>Range</td>
<td>182-230</td>
</tr>
<tr>
<td></td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>214.21</td>
</tr>
<tr>
<td></td>
<td>13.45</td>
</tr>
<tr>
<td></td>
<td>180-230</td>
</tr>
</tbody>
</table>
### TABLE V

**SUMMARY OF NUMBER OF STUDENTS IN ALGEBRA, FRESHMAN ENGLISH, SOPHOMORE LITERATURE, AND JUNIOR LITERATURE AT BEGINNING AND AT CLOSE OF THE EXPERIMENT**

<table>
<thead>
<tr>
<th>Course</th>
<th>At Beginning of Experiment</th>
<th>At Close of Experiment</th>
<th>Used in the Experiment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Algebra</td>
<td>24</td>
<td>27</td>
<td>22</td>
</tr>
<tr>
<td>Fr. English</td>
<td>24</td>
<td>27</td>
<td>21</td>
</tr>
<tr>
<td>Soph. Lit.</td>
<td>25</td>
<td>24</td>
<td>25</td>
</tr>
<tr>
<td>Junior Lit.</td>
<td>17</td>
<td>16</td>
<td>17</td>
</tr>
</tbody>
</table>
PRESENTATION AND INTERPRETATION OF DATA

Tables VI to XVIII inclusive present the results obtained from initial tests and final tests together with a summary of the differences between the control and experiment groups of each of the classes in the experiment. Figures 1 to 4 inclusive present graphically these same differences. The results from each class involved will be presented in turn.

ALGEBRA. Table VI gives individual scores in initial and final tests of the control group together with the change resulting from the semester's work. The mean gain for this group is found to be 4.16, the standard deviation is 3.11 and the standard deviation of the mean is .73. Table VII gives the same information for the experiment group. The mean gain is 5.88, the standard deviation is 4.28 and the standard deviation of the mean is 1. Table VIII deals with the differences between the two groups. The difference between the means of the two groups is found to be 1.72 in favor of the experiment group. The sigma difference is 1.24. The difference over sigma difference gives 1.38 sigma which indicates nine chances out of ten that the real difference is greater than zero in favor of the experiment group.

FRESHMAN ENGLISH. Table IX gives individual scores in initial and final tests of the control group together with the gains. The mean gain for this group is found to be 11.93, the standard deviation is 10.75 and the standard deviation of the mean is 2.68. Table X presents the same data for the experiment group. The mean gain is 14.43, the standard deviation is 7.92 and the standard deviation of the mean is 1.98. Table XI deals with the difference between the two groups. The difference between the means of the two groups is 2.5 in favor of the experiment group. The sigma difference is 3.33. Difference over sigma difference gives .75 sigma which indicates 7.7 chances out of 10 that the real difference is greater than zero in favor of the experiment group.

SOPHOMORE LITERATURE. Table XII presents individual scores in initial and final tests of the control group together with the gains. The mean gain for this group is 21.38, the standard deviation is 12.24 and the standard deviation of the mean is 2.88. In Table XIII we find the same data for the experiment group. The mean gain is 15.11, the standard deviation is 10.03, and the standard deviation of the mean is 2.36. The difference between the means of the groups as shown in Table XIV is 6.27 in favor of the control group. The sigma difference is 3.72. Difference over sigma difference gives 1.68 sigma which
indicates that there are 9.5 chances out of ten that the real difference is greater than zero in favor of the control group.

JUNIOR LITERATURE. Table XV gives individual scores in the initial and final tests of the control group together with the resulting gains. The mean gain for this group is 5.07, the standard deviation is 6.93 and the standard deviation of the mean is 1.85. Table XVI gives for the experiment group a mean gain of 8.5, the standard deviation is 11.24 and the standard deviation of the mean is 3. In Table XVII we find that the difference between the means of the two groups is 3.43 in favor of the experiment group. The sigma difference is 3.52. Difference over sigma difference gives .97 sigma which indicates 8.3 chances out of ten that the real difference is greater than zero in favor of the experiment group.

Table XVIII summarizes the differences between the control and experiment groups in all the classes of the experiment.
<table>
<thead>
<tr>
<th>Student</th>
<th>Initial Test</th>
<th>Final Test</th>
<th>Gain</th>
</tr>
</thead>
<tbody>
<tr>
<td>E. Mc.</td>
<td>12</td>
<td>21</td>
<td>9</td>
</tr>
<tr>
<td>M. W.</td>
<td>11</td>
<td>13</td>
<td>2</td>
</tr>
<tr>
<td>M. K.</td>
<td>7</td>
<td>11</td>
<td>4</td>
</tr>
<tr>
<td>R. B.</td>
<td>5</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>R. R.</td>
<td>20</td>
<td>26</td>
<td>6</td>
</tr>
<tr>
<td>V. D.</td>
<td>10</td>
<td>13</td>
<td>3</td>
</tr>
<tr>
<td>A. R.</td>
<td>11</td>
<td>15</td>
<td>4</td>
</tr>
<tr>
<td>G. P.</td>
<td>3</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>C. F.</td>
<td>3</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>J. G.</td>
<td>9</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>C. F.</td>
<td>5</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>G. G.</td>
<td>5</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td>D. L.</td>
<td>9</td>
<td>19</td>
<td>10</td>
</tr>
<tr>
<td>W. M.</td>
<td>7</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>D. U.</td>
<td>7</td>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td>R. S.</td>
<td>2</td>
<td>13</td>
<td>11</td>
</tr>
<tr>
<td>M. S.</td>
<td>10</td>
<td>14</td>
<td>4</td>
</tr>
<tr>
<td>L. K.</td>
<td>5</td>
<td>5</td>
<td>0</td>
</tr>
</tbody>
</table>

Mean Gain 4.16

Standard Deviation 3.11

Standard Deviation Mean .73
TABLE VII

RESULTS OF INITIAL TEST AND FINAL TEST IN ALGEBRA TOGETHER WITH INDIVIDUAL GAINS, MEAN GAIN, STANDARD DEVIATION, AND STANDARD DEVIATION OF THE MEAN FOR EXPERIMENT GROUP.

<table>
<thead>
<tr>
<th>Student</th>
<th>Initial Test</th>
<th>Final Test</th>
<th>Gains</th>
</tr>
</thead>
<tbody>
<tr>
<td>L. Mc.</td>
<td>12</td>
<td>19</td>
<td>7</td>
</tr>
<tr>
<td>L. H.</td>
<td>11</td>
<td>15</td>
<td>4</td>
</tr>
<tr>
<td>K. C.</td>
<td>10</td>
<td>22</td>
<td>12</td>
</tr>
<tr>
<td>H. B.</td>
<td>9</td>
<td>22</td>
<td>13</td>
</tr>
<tr>
<td>P. G.</td>
<td>6</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>M. H.</td>
<td>8</td>
<td>15</td>
<td>7</td>
</tr>
<tr>
<td>M. R.</td>
<td>14</td>
<td>23</td>
<td>9</td>
</tr>
<tr>
<td>R. M.</td>
<td>7</td>
<td>16</td>
<td>9</td>
</tr>
<tr>
<td>S. H.</td>
<td>6</td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td>R. B.</td>
<td>7</td>
<td>11</td>
<td>4</td>
</tr>
<tr>
<td>E. E.</td>
<td>7</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>C. B.</td>
<td>6</td>
<td>4</td>
<td>-2</td>
</tr>
<tr>
<td>T. T.</td>
<td>3</td>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td>B. H.</td>
<td>4</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>R. L.</td>
<td>6</td>
<td>20</td>
<td>14</td>
</tr>
<tr>
<td>N. H.</td>
<td>3</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>N. F.</td>
<td>3</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>D. M.</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

Mean Gain 5.88
Standard Deviation 4.28
Standard Deviation Mean 1.00
**TABLE VIII**

**SUMMARY OF DIFFERENCE BETWEEN CONTROL GROUP AND EXPERIMENT GROUP IN ALGEBRA**

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean gain control group</td>
<td>4.16</td>
<td></td>
</tr>
<tr>
<td>Mean gain experiment group</td>
<td>5.88</td>
<td></td>
</tr>
<tr>
<td>Difference</td>
<td>1.72</td>
<td></td>
</tr>
<tr>
<td>Sigma difference</td>
<td>1.24</td>
<td></td>
</tr>
</tbody>
</table>

\[
\text{\frac{1.72}{1.24}} = 1.38 \text{ sigma}
\]

1.38 sigma indicates nine chances out of ten that the real difference is greater than zero in favor of the experiment group.
### TABLE IX

RESULTS OF INITIAL TEST AND FINAL TEST IN FRESHMAN ENGLISH TOGETHER WITH INDIVIDUAL GAINS, MEAN GAIN, STANDARD DEVIATION, AND STANDARD DEVIATION OF THE MEAN FOR THE CONTROL GROUP.

<table>
<thead>
<tr>
<th>Student</th>
<th>Initial Test</th>
<th>Final Test</th>
<th>Gains</th>
</tr>
</thead>
<tbody>
<tr>
<td>M. W.</td>
<td>99</td>
<td>112</td>
<td>13</td>
</tr>
<tr>
<td>V. B.</td>
<td>96</td>
<td>115</td>
<td>19</td>
</tr>
<tr>
<td>M. K.</td>
<td>67</td>
<td>92</td>
<td>25</td>
</tr>
<tr>
<td>M. H.</td>
<td>90</td>
<td>89</td>
<td>-1</td>
</tr>
<tr>
<td>H. B.</td>
<td>83</td>
<td>93</td>
<td>10</td>
</tr>
<tr>
<td>V. D.</td>
<td>95</td>
<td>86</td>
<td>-9</td>
</tr>
<tr>
<td>M. R.</td>
<td>73</td>
<td>98</td>
<td>25</td>
</tr>
<tr>
<td>R. B.</td>
<td>84</td>
<td>109</td>
<td>25</td>
</tr>
<tr>
<td>C. F.</td>
<td>93</td>
<td>93</td>
<td>0</td>
</tr>
<tr>
<td>E. D.</td>
<td>88</td>
<td>96</td>
<td>8</td>
</tr>
<tr>
<td>C. B.</td>
<td>73</td>
<td>102</td>
<td>29</td>
</tr>
<tr>
<td>C. F.</td>
<td>83</td>
<td>81</td>
<td>-2</td>
</tr>
<tr>
<td>D. L.</td>
<td>72</td>
<td>83</td>
<td>11</td>
</tr>
<tr>
<td>E. C.</td>
<td>72</td>
<td>89</td>
<td>17</td>
</tr>
<tr>
<td>L. L.</td>
<td>76</td>
<td>88</td>
<td>12</td>
</tr>
<tr>
<td>N. F.</td>
<td>70</td>
<td>79</td>
<td>9</td>
</tr>
</tbody>
</table>

Mean Gain: 11.93

Standard Deviation: 10.75

Standard Deviation Mean: 2.68
<table>
<thead>
<tr>
<th>Student</th>
<th>Initial Test</th>
<th>Final Test</th>
<th>Gains</th>
</tr>
</thead>
<tbody>
<tr>
<td>L. H.</td>
<td>100</td>
<td>131</td>
<td>31</td>
</tr>
<tr>
<td>K. C.</td>
<td>86</td>
<td>104</td>
<td>18</td>
</tr>
<tr>
<td>R. B.</td>
<td>78</td>
<td>94</td>
<td>16</td>
</tr>
<tr>
<td>P. G.</td>
<td>79</td>
<td>98</td>
<td>19</td>
</tr>
<tr>
<td>R. R.</td>
<td>81</td>
<td>90</td>
<td>9</td>
</tr>
<tr>
<td>R. M.</td>
<td>95</td>
<td>107</td>
<td>12</td>
</tr>
<tr>
<td>A. R.</td>
<td>79</td>
<td>96</td>
<td>17</td>
</tr>
<tr>
<td>S. H.</td>
<td>80</td>
<td>91</td>
<td>11</td>
</tr>
<tr>
<td>E. E.</td>
<td>82</td>
<td>91</td>
<td>9</td>
</tr>
<tr>
<td>T. T.</td>
<td>70</td>
<td>98</td>
<td>28</td>
</tr>
<tr>
<td>G. G.</td>
<td>79</td>
<td>83</td>
<td>4</td>
</tr>
<tr>
<td>B. P.</td>
<td>77</td>
<td>83</td>
<td>6</td>
</tr>
<tr>
<td>O. V.</td>
<td>66</td>
<td>83</td>
<td>17</td>
</tr>
<tr>
<td>W. M.</td>
<td>78</td>
<td>98</td>
<td>20</td>
</tr>
<tr>
<td>N. H.</td>
<td>79</td>
<td>79</td>
<td>0</td>
</tr>
<tr>
<td>M. S.</td>
<td>71</td>
<td>85</td>
<td>14</td>
</tr>
</tbody>
</table>

Mean Gain 14.43
Standard Deviation 7.92
Standard Deviation of Mean 1.98
TABLE XI

SUMMARY OF DIFFERENCE BETWEEN CONTROL GROUP AND EXPERIMENT GROUP IN FRESHMEN ENGLISH.

<p>| | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean gain control group</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>11.93</td>
</tr>
<tr>
<td>Mean gain experiment group</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>14.43</td>
</tr>
<tr>
<td>Difference</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2.5</td>
</tr>
<tr>
<td>Sigma difference</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>3.33</td>
</tr>
<tr>
<td>2.5</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.75 sigma</td>
</tr>
<tr>
<td>3.33</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

0.75 sigma indicates 7.7 chances out of 10 that the real difference is greater than zero in favor of the experiment group.
TABLE XII

RESULTS OF INITIAL TEST AND FINAL TEST IN SOPHOMORE LITERATURE TOGETHER WITH INDIVIDUAL GAINS, MEAN GAIN, STANDARD DEVIATION, AND STANDARD DEVIATION OF THE MEAN, FOR THE CONTROL GROUP.

<table>
<thead>
<tr>
<th>Student</th>
<th>Initial Test</th>
<th>Final Test</th>
<th>Gains</th>
</tr>
</thead>
<tbody>
<tr>
<td>W. Mc.</td>
<td>49</td>
<td>49</td>
<td>0</td>
</tr>
<tr>
<td>D. H.</td>
<td>26</td>
<td>55</td>
<td>29</td>
</tr>
<tr>
<td>H. H.</td>
<td>46</td>
<td>64</td>
<td>18</td>
</tr>
<tr>
<td>T. Mc.</td>
<td>62</td>
<td>66</td>
<td>4</td>
</tr>
<tr>
<td>M. A.</td>
<td>21</td>
<td>55</td>
<td>34</td>
</tr>
<tr>
<td>L. S.</td>
<td>44</td>
<td>55</td>
<td>11</td>
</tr>
<tr>
<td>R. H.</td>
<td>51</td>
<td>61</td>
<td>10</td>
</tr>
<tr>
<td>R. J.</td>
<td>26</td>
<td>56</td>
<td>30</td>
</tr>
<tr>
<td>G. C.</td>
<td>19</td>
<td>58</td>
<td>39</td>
</tr>
<tr>
<td>M. L.</td>
<td>16</td>
<td>57</td>
<td>41</td>
</tr>
<tr>
<td>A. E.</td>
<td>29</td>
<td>56</td>
<td>27</td>
</tr>
<tr>
<td>V. F.</td>
<td>31</td>
<td>32</td>
<td>1</td>
</tr>
<tr>
<td>C. G.</td>
<td>37</td>
<td>56</td>
<td>19</td>
</tr>
<tr>
<td>B. S.</td>
<td>30</td>
<td>49</td>
<td>19</td>
</tr>
<tr>
<td>J. P.</td>
<td>27</td>
<td>50</td>
<td>23</td>
</tr>
<tr>
<td>R. H.</td>
<td>15</td>
<td>52</td>
<td>37</td>
</tr>
<tr>
<td>D. P.</td>
<td>16</td>
<td>38</td>
<td>22</td>
</tr>
<tr>
<td>P. K.</td>
<td>28</td>
<td>49</td>
<td>21</td>
</tr>
</tbody>
</table>

Mean Gain 21.38
Standard Deviation 12.24
Standard Deviation of Mean 2.88
TABLE XIII

RESULTS OF INITIAL TEST AND FINAL TEST IN SOPHOMORE LITERATURE TOGETHER WITH INDIVIDUAL GAINS, MEAN GAIN, STANDARD DEVIATION, AND STANDARD DEVIATION OF THE MEAN, FOR THE EXPERIMENT GROUP.

<table>
<thead>
<tr>
<th>Student</th>
<th>Initial Test</th>
<th>Final Test</th>
<th>Gains</th>
</tr>
</thead>
<tbody>
<tr>
<td>E. B.</td>
<td>57</td>
<td>77</td>
<td>20</td>
</tr>
<tr>
<td>H. Mc.</td>
<td>34</td>
<td>67</td>
<td>33</td>
</tr>
<tr>
<td>D. J.</td>
<td>39</td>
<td>70</td>
<td>31</td>
</tr>
<tr>
<td>M. L.</td>
<td>30</td>
<td>55</td>
<td>25</td>
</tr>
<tr>
<td>H. R.</td>
<td>50</td>
<td>50</td>
<td>0</td>
</tr>
<tr>
<td>G. B.</td>
<td>38</td>
<td>52</td>
<td>14</td>
</tr>
<tr>
<td>R. S.</td>
<td>40</td>
<td>52</td>
<td>12</td>
</tr>
<tr>
<td>G. Mc.</td>
<td>9</td>
<td>42</td>
<td>33</td>
</tr>
<tr>
<td>R. B.</td>
<td>51</td>
<td>58</td>
<td>7</td>
</tr>
<tr>
<td>B. F.</td>
<td>38</td>
<td>50</td>
<td>12</td>
</tr>
<tr>
<td>R. F.</td>
<td>38</td>
<td>50</td>
<td>12</td>
</tr>
<tr>
<td>R. H.</td>
<td>19</td>
<td>41</td>
<td>22</td>
</tr>
<tr>
<td>S. B.</td>
<td>28</td>
<td>37</td>
<td>9</td>
</tr>
<tr>
<td>A. M.</td>
<td>43</td>
<td>49</td>
<td>6</td>
</tr>
<tr>
<td>B. P.</td>
<td>34</td>
<td>34</td>
<td>0</td>
</tr>
<tr>
<td>D. U.</td>
<td>38</td>
<td>45</td>
<td>7</td>
</tr>
<tr>
<td>R. L.</td>
<td>26</td>
<td>38</td>
<td>12</td>
</tr>
<tr>
<td>M. K.</td>
<td>25</td>
<td>42</td>
<td>17</td>
</tr>
</tbody>
</table>

Mean Gain                        15.11
Standard Deviation               10.03
Standard Deviation of Mean       2.36
### TABLE XIV

**SUMMARY OF DIFFERENCE BETWEEN CONTROL GROUP AND EXPERIMENT GROUP IN SOPHOMORE LITERATURE.**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean gain control group</td>
<td>21.38</td>
</tr>
<tr>
<td>Mean gain experiment group</td>
<td>15.11</td>
</tr>
<tr>
<td>Difference</td>
<td>6.27</td>
</tr>
<tr>
<td>Sigma difference</td>
<td>3.72</td>
</tr>
</tbody>
</table>

\[
\frac{6.27}{3.72} = 1.68 \text{ sigma}
\]

1.68 sigma indicates 9.5 chances out of ten that the real difference is greater than zero in favor of the control group.
RESULTS OF INITIAL TEST AND FINAL TEST IN JUNIOR LITERATURE TOGETHER WITH INDIVIDUAL GAINS, MEAN GAIN, STANDARD DEVIATION, AND STANDARD DEVIATION OF THE MEAN FOR THE CONTROL GROUP.

<table>
<thead>
<tr>
<th>Student</th>
<th>Initial Test</th>
<th>Final Test</th>
<th>Gain</th>
</tr>
</thead>
<tbody>
<tr>
<td>S. W.</td>
<td>54</td>
<td>58</td>
<td>4</td>
</tr>
<tr>
<td>N. Mc.</td>
<td>48</td>
<td>47</td>
<td>-1</td>
</tr>
<tr>
<td>J. R.</td>
<td>53</td>
<td>53</td>
<td>0</td>
</tr>
<tr>
<td>M. B.</td>
<td>60</td>
<td>66</td>
<td>6</td>
</tr>
<tr>
<td>B. M.</td>
<td>26</td>
<td>46</td>
<td>20</td>
</tr>
<tr>
<td>F. H.</td>
<td>57</td>
<td>61</td>
<td>4</td>
</tr>
<tr>
<td>V. S.</td>
<td>30</td>
<td>43</td>
<td>13</td>
</tr>
<tr>
<td>M. H.</td>
<td>63</td>
<td>70</td>
<td>7</td>
</tr>
<tr>
<td>R. W.</td>
<td>45</td>
<td>47</td>
<td>2</td>
</tr>
<tr>
<td>O. F.</td>
<td>55</td>
<td>55</td>
<td>0</td>
</tr>
<tr>
<td>G. R.</td>
<td>36</td>
<td>37</td>
<td>1</td>
</tr>
<tr>
<td>I. R.</td>
<td>44</td>
<td>38</td>
<td>-6</td>
</tr>
<tr>
<td>L. E.</td>
<td>26</td>
<td>43</td>
<td>17</td>
</tr>
<tr>
<td>V. B.</td>
<td>55</td>
<td>59</td>
<td>4</td>
</tr>
</tbody>
</table>

Mean Gain: 5.07
Standard Deviation: 6.93
Standard Deviation of Mean: 1.85
RESULTS OF INITIAL TEST AND FINAL TEST IN JUNIOR LITERATURE TOGETHER WITH INDIVIDUAL GAINS, MEAN GAIN, STANDARD DEVIATION, AND STANDARD DEVIATION OF THE MEAN, FOR THE EXPERIMENT GROUP.

<table>
<thead>
<tr>
<th>Student</th>
<th>Initial Test</th>
<th>Final Test</th>
<th>Gain</th>
</tr>
</thead>
<tbody>
<tr>
<td>F. P.</td>
<td>60</td>
<td>57</td>
<td>-3</td>
</tr>
<tr>
<td>L. S.</td>
<td>55</td>
<td>64</td>
<td>9</td>
</tr>
<tr>
<td>G. P.</td>
<td>52</td>
<td>58</td>
<td>6</td>
</tr>
<tr>
<td>M. H.</td>
<td>38</td>
<td>71</td>
<td>33</td>
</tr>
<tr>
<td>V. E.</td>
<td>57</td>
<td>56</td>
<td>-1</td>
</tr>
<tr>
<td>A. R.</td>
<td>51</td>
<td>49</td>
<td>-2</td>
</tr>
<tr>
<td>J. R.</td>
<td>19</td>
<td>45</td>
<td>26</td>
</tr>
<tr>
<td>C. P.</td>
<td>69</td>
<td>68</td>
<td>-1</td>
</tr>
<tr>
<td>L. W.</td>
<td>47</td>
<td>57</td>
<td>10</td>
</tr>
<tr>
<td>R. K.</td>
<td>37</td>
<td>30</td>
<td>-7</td>
</tr>
<tr>
<td>B. B.</td>
<td>41</td>
<td>49</td>
<td>8</td>
</tr>
<tr>
<td>F. E.</td>
<td>44</td>
<td>50</td>
<td>6</td>
</tr>
<tr>
<td>F. S.</td>
<td>26</td>
<td>40</td>
<td>14</td>
</tr>
<tr>
<td>R. F.</td>
<td>14</td>
<td>35</td>
<td>21</td>
</tr>
</tbody>
</table>

Mean Gain 8.5
Standard Deviation 11.24
Standard Deviation of Mean 3.00
TABLE XVII

SUMMARY OF DIFFERENCE BETWEEN CONTROL GROUP AND EXPERIMENT GROUP IN JUNIOR LITERATURE.

Mean gain control group  - - - - - - - -  5.07
Mean gain experiment group  - - - - - - - -  8.50
Difference  - - - - - - - - - - - - - -  3.43
Sigma difference  - - - - - - - - - - - - - -  3.52

\[
\frac{3.43}{3.52} \quad \text{.97 sigma}
\]

.97 sigma indicates 8.3 chances out of 10 that the real difference is greater than zero in favor of the experiment group.
TABLE XVIII

SUMMARY OF DIFFERENCES BETWEEN CONTROL GROUPS AND EXPERIMENT GROUPS IN ALGEBRA, FRESHMAN ENGLISH, SOPHOMORE LITERATURE AND JUNIOR LITERATURE.

<table>
<thead>
<tr>
<th></th>
<th>Algebra</th>
<th>Freshman English</th>
<th>Sophomore Literature</th>
<th>Junior Literature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean gain</td>
<td>4.16</td>
<td>11.93</td>
<td>21.38</td>
<td>5.07</td>
</tr>
<tr>
<td>control group</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean gain</td>
<td>5.88</td>
<td>14.43</td>
<td>15.11</td>
<td>8.05</td>
</tr>
<tr>
<td>experiment group</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difference</td>
<td>1.72</td>
<td>2.50</td>
<td>6.27</td>
<td>3.43</td>
</tr>
<tr>
<td>Sigma difference</td>
<td>1.24</td>
<td>3.33</td>
<td>3.72</td>
<td>3.52</td>
</tr>
<tr>
<td>Difference over sigma difference</td>
<td>1.38</td>
<td>.75</td>
<td>1.68</td>
<td>.97</td>
</tr>
</tbody>
</table>

1.38 sigma indicates 9 chances out of 10 that the real difference is greater than zero in favor of the experiment group.

.75 sigma indicates 7.7 chances out of 10 that the real difference is greater than zero in favor of the experiment group.

1.68 sigma indicates 9.5 chances out of 10 that the real difference is greater than zero in favor of the control group.

.97 sigma indicates 8.3 chances out of 10 that the real difference is greater than zero in favor of the experiment group.
FIGURE 1.

GRAPHICAL PRESENTATION OF GAINS, IN ASCENDING ORDER, FOR CONTROL AND EXPERIMENT GROUPS IN ALGEBRA.

Horizontal numbers represent pupils. Perpendicular numbers represent points of gain in final test over initial test.
Red line represents control group.
Black line represents experiment group.
FIGURE 2.

GRAPHICAL PRESENTATION OF GAINS, IN ASCENDING ORDER, FOR CONTROL AND EXPERIMENT GROUPS IN FRESHMAN ENGLISH.

Horizontal numbers represent pupils. Perpendicular numbers represent points of gain in final test over initial test. Red line represents control group. Black line represents experiment group.
GRAPHICAL PRESENTATION OF GAINS, IN ASCENDING ORDER, FOR CONTROL AND EXPERIMENT GROUPS IN SOPHOMORE LITERATURE.

Horizontal numbers represent pupils. Perpendicular numbers represent points of gain in final test over initial test.
Red line represents control group.
Black line represents experiment group.
FIGURE 4.

GRAPHICAL PRESENTATION OF GAINS, IN ASCENDING ORDER, FOR CONTROL AND EXPERIMENT GROUPS IN JUNIOR LITERATURE.

Horizontal numbers represent pupils. Perpendicular numbers represent points of gain in final test over initial test. Red line represents control group. Black line represents experiment group.
SUMMARY

Summarizing the results of this experiment the evidence points to these conclusions:

(1) The difference between the two groups in Algebra is very much in favor of the group using the greater part of the recitation period for study.

(2) In Freshman English there is a significant difference between the two recitation methods used in favor of the group in which a major part of the period was devoted to study.

(3) The difference between the two groups in Sophomore Literature is very much in favor of the group using the conventional recitation procedure during most of the period.

(4) There is a significant difference between the two groups in Junior Literature in favor of the group using the greater part of the recitation period for study.

(5) In three of the four classes concerned in the experiment—Algebra, Freshman English, and Junior Literature—the results indicate an advantage in favor of the groups that confined general class activity to a minimum amount of time and allowed more time for individual study. In one class—Sophomore Literature—the advantage was with the group using the conventional recitation procedure.
(6) General conclusions should not be drawn from the results of this experiment. Further experimentation with different types of supervised study recitations will be necessary in order to determine which techniques are best under varying conditions.
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28. HARRIS, G. L. "Supervised Study in the University of Chicago High School." School Review, Vol. 26, Sept. 1918, pages 490-510. (Tells how supervised study is conducted in the University of Chicago high school.)


32. HOLZINGER, KARL J. "Periodical Literature on Supervised Study During the Last Five Years." Elementary School Journal, Vol. 20, Oct. 1919, pages 146-154. (Gives status of supervised study as to administrative phases, plans in operation, technique of supervised study and evaluation of results.)

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42. NIELSON, CH.  "An Innovation in Supervised Study."  School Review, Vol. 25, March 1917, page 220.  (An innovation in supervised study in Vallejo, California high school is described.)


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46. PROCTOR, W. M.  "Home and School Study Time of 1661 Pacific Coast High School Pupils."  School and Society, Vol 6, Nov 17, 1917, pages 596-600.  (An investigation that shows amount of home and school study of these pupils.)
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55. WHITE, B. F. "Supervised Study". Masters Thesis, Kansas University, 1926. (Compares grades of Kansas University students who came from high schools with supervised study with those who came from high schools that did not have supervised study.)

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A - Outline Used in Subjects.


Following is an outline of the work covered in algebra during the course of the experiment here reported:

I Division and fractions
   1. Laws of exponents in division
   2. Division by monomials
   3. Division by polynomials
   4. Reduction of fractions
   5. Changing signs of fractions
   6. Multiplication, division, addition and subtraction of fractions.
   7. Lowest common multiple and lowest common denominator
   8. Complex fractions.

II Fractional and literal equations
   1. Equations containing decimals
   2. Literal equations
      A Applied problems.

III Sets of linear equations
   1. Graphs
   2. Matching exercises
   3. Methods of solving
      A Addition and subtraction method
      B The substitution method
   4. Applied problems and exercises

IV Ratio, proportion and variation

V Square root and radicals
   1 Square root
      A Use of tables
      B Fractional exponents
      C Roots of monomial expressions
      D Applied problems and exercises
   2 Radicals
      A Simplification
      B Addition, subtraction, multiplication and division
      C Zero and negative exponents.
VI  Indirect measurement
   1. Various methods
   2. Tangent of an angle
   3. Problems and exercises

VII  Quadratic equations
   1. Methods of solution
   2. Graphs
   3. Exercises and problems.

FRESHMAN ENGLISH: Text used was "High School English Book" by Hitchcock. Supplementary reference books were also used. The following topics were covered in the course of the semester: Composition, definition and use, use of words, narrating, explaining, debate, social and business letters, and punctuation. Two days of each week were spent exclusively in a study of punctuation with the use of exercises. Sentences were dictated for punctuation and correction. Each student was required to compile a booklet of newspaper or magazine clippings illustrating each of the punctuation forms studied. A study was also made of Good English posters.

SOPHOMORE LITERATURE: Class work was based on a study of the novel and the drama. Following is an outline of the novels and dramas studied:

"Ivanhoe" - Scott

I  Background study
   1. Crusades and orders of crusaders
   2. The Norman conquest and its effect upon England
   3. Condition of England at time of story
   4. The church and the clergy

II  Reading the novel
   1. Emphasis upon enjoyment and clear understanding of the story

III  Study of Ivanhoe as a novel - brief, not much dissecting.

"The Virginian" - Wister

I  Background study
   1. Wyoming, 1875 - 1900
   2. Wister as an authority of Western life.

II  Reading the story.
   1. Rapid reading - little need for explanation
   2. Emphasis upon enjoyment of story.
III Study of the novel
1. Characteristics checked.
2. The episode type of the novel contrasted with Ivanhoe
3. Diagrams, character sketches and descriptions
   "Macbeth" - Shakespeare

I Reading the play
1. Emphasis upon understanding of the story and enjoyment.

II Study of the drama (general)
1. Definition of drama and the kinds of drama
2. Construction of the drama; exposition, initial incident, climax, catastrophe, plot and sub plot, acts, scenes, stage directions, and stage business. This material was studied as the need arose and not at one time.
3. Study of the play Macbeth
   A Finding of initial incident, climax, etc.
   B Character studies
   C Diagrams
   "Merchant of Venice" - Shakespeare

I Reading of the play
1. Background study
2. Reading
3. Study of the play
   A Plot construction
   B Character studies
   C Memory work

In addition to the class work just outlined, outside readings were required of all students. A passing grade was required before any report was accepted. The grade in outside reading counted one-fifth of the final grade in literature. Readings consisted of Shakespeare, fiction, non-fiction, and modern drama. Points for readings were awarded as follows: Shakespearean play, 3 points; full length modern drama (three acts) 3 points; one act play, 1 point; difficult fiction (Dickens, Scott, Dumas, Cooper, Hawthorne, etc.), 3 points; easy fiction, 2 points; non-fiction (biography, travel, art, science, etc.), 2 or 3 points depending on difficulty. The total points necessary for a given grade on outside readings were: A - 28 points; B - 21 points; C - 14 points; and D - 12 points.

JUNIOR LITERATURE: Class work was based on the drama, essay and poetry. Following is an outline of the work covered in this subject:

First Six-Week Period
I Study of English drama
1. Religious origin of drama
2. Development of the stage
3. Changes as to actors, plots, etc.
4. Parts of a play
II Life of Shakespeare

III Study of "King Lear"
   1. Theme in booklet form on scenes in King Lear
   2. Character study of chief characters and costumes

IV Modern plays compared with Shakespearean plays
   Second and Third Six-Week Periods

I Study of essays - Text used "Irving’s Essays."
   1. Types of essays
   2. Classification of essays
      A As to style, literary or informational, familiar or formal
      B As to subject, travels, customs, nature, current history, social problems, etc.
      C As to the author’s purpose, to inform, persuade or entertain.
   3. Study of Irving’s essays
   4. Essays by other authors such as Emerson, Addison, Stevenson, Holmes, were reported upon.
   5. Modern essays taken from magazines and newspapers.
   6. Original essays written by each student.

II Study of poetry (Object - to teach the types of poetry and to develop an appreciation for poetry)
   1. Students select favorite poems
   2. Difference between prose and poetry noted
   3. Study of primitive poetry
   4. Study of the epic, the ballad and lyrics.
   5. Each made a study of some author such as Burns, Milton, Browning, Coleridge, Byron, Keats, Tennyson, Bryant, Chaucer, Spencer, Kipling, Longfellow, Whittier, Lowell, Shelly, Gray, Wordsworth and Eugene Field.
   6. Criticism of poems
   7. Memorizing of poem
   8. Each wrote an original poem
PART B - Teachers' Statements.

Each of the instructors who conducted classes that were involved in this experiment were asked to make a statement regarding the two procedures used. These statements follow:

"In the teaching of algebra I prefer the type of recitation that devotes a major part of the period to study for the following reasons: The student who is able to grasp the problem quickly need not be bored by lengthy explanations and have his time wasted. This time saved may be spent with individuals or small groups in needed help. It is much easier to find out the difficulties of individual students. Discipline problems are reduced to a minimum". -- Algebra Instructor.

"In the period largely devoted to study I found that the students were more determined to get an assignment. Their assignments were more carefully prepared. The attention was most ideal as they realized they had but a short time to grasp the essentials. The majority of students liked the recitation plan best. There seems to be more interest aroused in class."--Freshman English Instructor--Junior Literature Instructor.

"For the study of literature which needs much background study and explanation I favor the type of period devoted largely to recitation. Shakespeare, for instance, is always rather difficult for the sophomore. Much time needs to be spent in reading aloud. This seems to clear up many difficulties caused by the unfamiliar mode of expression in the plays. The story, novel or drama, with an historical setting and political situations usually needs careful discussion and frequent reviews of the details of the story to keep down confusion. If time is not taken for these explanations, necessary for the clear understanding, the student becomes hopelessly confused and decides that he does not like the selection being studied. This usually takes considerable time because the student is often thoroughly unfamiliar with the necessary background. However, when it came to the reading of the more modern novel I found the student able to read intelligently without much time given to class discussion of story detail as read daily. It seemed preferable to allow the student to read at the rate his interest dictated and to hold discussions only on more general topics."--Sophomore Literature Instructor.
PART C - Tests Used in the Experiment
Do not open this paper, or turn it over, until you are told to do so. Fill these blanks, giving your name, age, etc. Write plainly.

Name ........................................
(First name, initial, and last name)

Age last birthday ........ years.

School or college ........................................

City ...................................................

Name of teacher .......................... Date .......... 19 ..

How many months have you studied algebra? ..................

<table>
<thead>
<tr>
<th>PART</th>
<th>SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td></td>
</tr>
<tr>
<td>II</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>Rating</td>
<td></td>
</tr>
<tr>
<td>Classification</td>
<td></td>
</tr>
</tbody>
</table>

General Directions. This examination consists of two parts and requires 100 minutes of working time. The directions for each part are printed at the beginning of the part. Read them carefully and proceed at once to answer the questions. At the end of 30 minutes you will be told to go on to Part II. Do so whether you have finished Part I or not. You may return to Part I again if you finish Part II. If you finish Part I in less than 30 minutes and are sure your answers are right, you may go on to Part II. Ask no questions after the examination has begun. You need two sharpened lead pencils with erasers. Do not use ink.

When the examiner tells you to do so, you are to prepare the test blank for use, as follows: First fold back the cover pages of the test booklet and gently separate these from the inside portion of the booklet by pulling them loose from the staples. All answers are to be put on these cover pages (pages 2, 11, and 12). Let the cover pages be folded open so that the spaces for the answers to Part I are accessible. Do not do any figuring on the cover pages. When you have finished the examination, you will hand back both parts of the booklet. Do not turn the page yet.
Answers for Part I

**Chart A**
(For Exercises 18 and 19, Part I)

**Table 1**
(For Exercise 20, Part I)

<table>
<thead>
<tr>
<th>Values of $x$</th>
<th>Values of $y$</th>
</tr>
</thead>
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<td>0</td>
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<td>2</td>
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</tr>
<tr>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>-4</td>
<td>-4</td>
</tr>
</tbody>
</table>

**Chart B**
(For Exercise 20, Part I)

Score (number right) ................................................. [ 2 ]

(See Table 1)

(See Chart A)

(See Chart B)
PART I. MECHANICS

DIRECTIONS. Solve for $x$ in each of the following equations. Write the answers in the column at the right on page 2. You may use any of the blank spaces on pages 3 to 10 for figuring. Write your initials here.............

1. $24 = 16 + x$.

2. $7x - 3 = 4x + 6$.

3. $\frac{ax}{b} = c$.

4. $-6x - (-4x) = -4$.

5. $\frac{x}{5} = 1.2$.

Go right on to the next page.
6. \[ \frac{1}{x} = \frac{3}{x + 14} \]

7. \((2a - 3b)^2 = 3a^2 + x - 12ab + 8b^2\).

8. \[ 4x + \frac{2x - 3}{5} = 48 - x \]

9. \((3 - x)(4x + 6) = 48 - 4x^2\).

10. \((x + n)^2 - (x - n)^2 = 8\).
11. \( 6x^2 - 13x + 6 = 0. \)

12. \( S = \pi r^2 + 2\pi rx. \)

13. Solve for \( x \) and \( y: \)
   \[
   \begin{align*}
   4x + 3y &= 11, \\
   6x - 7y &= 97.
   \end{align*}
   \]

14. \( 4x^2 - 9 = 16x. \)

15. \( F = \frac{9}{5}x + 32. \)
16. \((4x + 5a)(4x - 5a) - 11a^2 = 0\).

17. \(x^2 - 4x + 1 = 0\).

18. Write the equation of the line in Chart A.

19. Plot in Chart A the graph of the equation \(x + 2y = 4\).

20. Plot in Chart B the graph of the equation \(y = x^2 + 2\). To do this enter in Table 1 (page 2) the values of \(y\) corresponding to the values of \(x\) given in that table. In plotting, use large dots.

Be sure your answers are right; then you may go on to Part II.
PART II. PROBLEMS

DIRECTIONS. Solve the following problems by algebra. Let $x$ represent the unknown (except where otherwise directed); write the equation and solve. You may draw or figure in any of the blank spaces on pages 3 to 10.

Write the equations and values of $x$ in the spaces provided on page 11 (one of the cover pages). You need not enter the $\$, ¢, ft., etc., signs and abbreviations. The numbers are sufficient.

1. A gardener wished to space three garden plots, each 10 feet wide, between two stone walls 50 feet apart, so as to have equal spaces on both sides of each plot. How many feet wide might the spaces be?

2. If a piece of cloth 44 inches long will shrink to 42 inches when washed, how many inches long will a 33-inch piece of the same cloth be after shrinking?

3. A tinsmith wishes to make a tin box, 2 inches high, twice as long as it is wide, so as to hold just 100 cubic inches. How many inches wide should he make the box?

4. A boy had a stick of molding 10 feet long and wished to use the whole of it in making a picture frame that should be two thirds as wide as it was long. How many feet long could he make it?

5. During a day, a soda-fountain clerk sold 175 drinks, some at 10¢ each and the remainder at 15¢ each, and received $21.50. How many 10¢ drinks did he sell? (Let $x$ = number of 10¢ drinks.)

Go right on to the next page.
6. It is desired to make a trunk 20 inches wide and long enough so that a straight umbrella 36 inches long can just lie diagonally in the bottom. How many inches long must the trunk be made? (Determine to the nearest inch.)

7. A Fahrenheit thermometer reading is 32 degrees more than nine fifths the corresponding Centigrade thermometer reading. How many degrees Centigrade reading correspond to 50 degrees Fahrenheit?

8. A cylindrical tank is 7 feet high and holds 1782 cubic feet of water. What is its radius in feet? (Vol. of cyl. = \( \pi r^2 h \).) (Use \( \frac{22}{7} \) for \( \pi \).) (In stating the equation to be solved, use \( r \) for the unknown instead of \( x \).)

9. A vessel contains 10 gallons of an 8% solution of salt. How many gallons of water must be boiled off to make it a 12% solution?

10. How many gallons of water were added to 30 gallons of milk which tested 5% butter fat if it now tests only 4% butter fat?

11. How many bushels of oats at 50¢ a bushel would you have to add to 100 bushels of corn at 75¢ a bushel to have a mixture worth 60¢ a bushel?
12. It is desired to make a cylindrical tank 4 feet high that will hold the same as a hemispherical tank of the same diameter. What must the radius of these tanks be in feet? (Vol. of sphere = \( \frac{2}{3} \pi r^3 \).) (Determine to the nearest tenth of a foot.) (Use \( r \) for the unknown.)

13. In the case of the lever shown here, the equation \( W_1D_1 = W_2D_2 + W_3D_3 \) holds for any weights and distances as long as the lever remains balanced. If \( W_1 = 10 \text{ lb.} \) and \( D_1 = 10 \text{ ft.} \), \( D_3 \) is just twice \( D_2 \), and \( W_2 \) and \( W_3 \) are each 5 lb., what is \( D_2 \)?

14. The distance (s) a body falls in \( t \) seconds is expressed by the formula \( s = 16t^2 + vt \), in which \( v \) is the initial velocity downward. How many seconds will it take a body to fall 640 ft. if thrown downward with a velocity of 48 ft. a second? (Use \( t \) for the unknown.)

15. How many dollars put at simple (i.e., not compound) interest for 2 years at 5\( \frac{1}{4} \)% per annum will amount to $100?
16. A stationer wishes to make a card 10 inches long and of such shape that when cut in two (crosswise) each half will have the same shape as the whole card. How many inches wide should he make it? (Determine to the nearest tenth of an inch.)

17. It is desired to divide the water in a 4-inch water main (inside diameter) between two pipes of equal diameter. What is the radius in inches (inside) of a pipe just half the cross-section of a 4-inch pipe? (Determine to the nearest tenth of an inch.) (Use \( r \) for the unknown.)

18. A girl left her home at noon and walked eastward at 3 miles an hour. At 2 o'clock her brother started after her at 5 miles an hour. How many hours \( (x) \) after the girl left, and at how many miles \( (y) \) from their home, did the boy overtake the girl? Solve graphically in Chart C (page 12).

19. How wide a strip must a boy mow around a lawn 50 ft. by 120 ft. in order that it shall be one-half mowed?

20. A rectangular garden is to be enclosed on three sides by fencing, the fourth side to be a stone wall which is already built. What is the width (in rods) of the largest garden that can be so enclosed with 40 rods of fencing? Solve graphically, in Chart D. To do this, enter in Table 2 (page 12) the value of \( A \) corresponding to each value of \( x \) given in that table. Write in the table on page 11 the formula you used for the area \( (A) \) of the garden in terms of \( x \). (In plotting, use large dots.)

Be sure all your answers are correct in both parts and properly entered in the tables.
### Answers for Part II

**Equations**

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(Nothing to be written in this space)

**Values of Unknown**

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13

$x =$

$y =$

(See Chart C)

|19 |   |   |

Equation: $A =$

(Nothing to be written in this space)

(See Table 2)

(See Chart D)

---

Score (number right)..........................

[ ii ]
Answers for Part II — Continued

Chart C
(For Problem 18, Part II)

Table 2
(For Problem 20, Part II)

Chart D
(For Problem 20, Part II)
EVERY PUPIL SCHOLARSHIP CONTEST
April 11, 1928
Bureau of Educational Measurements and Standards
Kansas State Teachers College, Emporia

FORM II

ENGLISH TEST

By E. R. BARRETT, TERESA M. RYAN and E. R. WOOD

Name .................... Age ... Sex ...
Classification in School: Fresh, Soph. Jr. Sr.
Underscore proper year.

Name of School ..........................

City ............................. State ........

Date of Examination ...........................

I
A
Punctuation and Capitalization
DIRECTIONS: In each of the following sentences one or more of the punctuation marks are enclosed in brackets. If the punctuation enclosed in brackets is correct, make a plus sign in the parenthesis before the sentence, as in “A” below. If any punctuation mark in brackets is not the correct mark for the place, make a minus sign in the parenthesis, as in “B” below.

Examples:

A. (+) Mr[.J Brown came home today.

B. (−) I am[,] not going today.

The period after “Mr.” in “A” is correct; therefore a plus sign is made in the parenthesis. The comma after “am” in sentence “B” is not correct; therefore a minus sign is made in the parenthesis.

1. ( ) When the boat sailed into the harbor[,] the flag was at half mast.
2. ( ) The chairman asked the girl to come forward[,] for the prize was hers.
3. ( ) Books[,] which contain detective stories[,] are most interesting to boys.
4. ( ) “Who sent for you[?]” inquired the captain.
5. ( ) I walked into the room[,] and spoke to her.
6. ( ) I asked John for the book[,] I wanted to read his copy.
7. ( ) Scattered over my desk were books, magazines[,] and papers.
8. ( ) “You have my book[,] said Mary[,] I left it on the table.”
10. ( ) Alice said[,] that she could not come.
11. ( ) We never really knew James[,] although he lived with us all winter.
12. ( ) “Keep on playing[,]” said the coach[,] “the game is not yet won.”
13. ( ) These men are on our team: John Smith[,] a sophomore; Henry Jones[,] a freshman; and Tom Brown[,] a senior.
14. ( ) The roads were not good[,] nevertheless we made the trip in two hours.
15. ( ) As the auditorium was crowded, we could not get in[,] but we could hear the concert from the outer hall.
16. ( ) Dear Sir[;]

Call for me at the Broadview Hotel.
17. ( ) Have you heard the quotation[,] “Millions for defense, but not one cent for tribute”?
18. ( ) Grace asked [“]what I had done.[”]
19. ( ) I replied, “I have been to the movies.[”] [“]Whom do you suppose I saw there?”
20. ( ) “When the signal sounds[,]” said the captain, [“]move forward.”
21. ( ) You can go[,] [“]Alice called out to us[,]”
22. ( ) Mary whispered to us[,] “Did your mother say[,] [“]Go to sleep[?”]
The boy said the ball was our[']s.

We saw women[']s hats in the window.

The ladies['] gowns were beautiful.

The teacher sent two[-J thirds of the children home.

He stood twenty[-~]third in line.

"Where is the lesson, John," Mary asked[?]

President Coolidge[,] whose home is in Vermont[,] is now in Washington.

I asked him where he was going[?]

Topeka is the Capital of Kansas.

I like French better than I do algebra.

John Jones was elected President of his class.

Many of the graduates of our high school attended college.

Mr. Curtis is a Senator from Kansas.

Texas is the largest State west of the Mississippi.

No one seems quite so lonely as a freshman.

He asked me, "where are you going?"

"I'm going to my class," Said I.

My family have moved to 721 Ninth Street.

A forty-acre field [lies] to the north.

Kindness does have an [affect] upon children.

The compromise did [effect] a peaceful settlement.

Why not [leave] the boy go home?

Boys rarely [ever] like that sort of story.

We did not [except] her invitation to visit her.

Mary lives only a short [way] from town.

I can not find your book [anywhere].

One of the boys [doesn't] see very well.

Jane really likes [those] kinds of salads.

The boy looks [like] his younger brother.

The book could be found [nowhere] in the room.
DIRECTIONS: In the following letter are fifteen numbered groups of words. Some of these groups make complete sentences; others do not. If the first group is a complete sentence, make a plus sign in the parenthesis to the left, numbered "1." If it is not a complete sentence, make a minus sign in the parenthesis. In like manner, in each numbered parenthesis make a plus sign if the group of words having the same number is a complete sentence, and a minus sign if the group is not.

Dear Mary,

1. [+] Your most interesting letter came today. [2+] Am so glad that you are in Florida for the winter. [3+] The climate being much warmer than it is here. [4+] Below zero here for the last few days. [5+] Then, too, we have had much snow. [6+] It is much warmer and more pleasant today, however. [7+] How we wish that this long winter were over! [8+] Which shows that we do not like the North either. [9+] When do you think you will return? [10+] Not before the middle or last of March, no doubt. [11+] Because this time of the year you have no reason to hurry home. [12+] Furthermore you are having a good time in Florida. [13+] Stopping at Kansas City on your way home? [14+] If you do stop there, please let me know. [15+] Hoping your good times continue, I am:

Yours sincerely,
Gene.

III
Verb Usage

DIRECTIONS: In each of the following sentences a word is enclosed in brackets. If the word is the correct grammatical form to be used in that place, make a plus sign in the parenthesis. If the form is incorrect, make a minus sign in the parenthesis. Under "b" is a reason for the form of the word to be used in the brackets in "a." If the reason is the correct one to be applied in this case, make a plus sign in the parenthesis. If the reason is not the correct one, make a minus sign in the parenthesis.

Examples:

1. a. (+) I saw [him].
   b. (+) Objective case, object of "saw."

2. a. (-) [Me] heard her.
   b. (+) Nominative case, subject of "heard."

3. a. (+) We [are] one in purpose.
   b. (-) Singular number, to agree with "we."

4. a. (-) Let [he] go with me.
   b. (-) Nominative case, subject of "let."

In these sentences, notice that a plus sign is placed in the parenthesis before a correct sentence and in the parenthesis before a correct reason. If the reason is the correct one to be applied in this case, make a plus sign in the parenthesis before the reason. If the reason is not the correct one, make a minus sign in the parenthesis.

Examples:

1. a. ( ) Both the door and the window of that room [was] left open last night.
   b. ( ) Singular number, to agree with the subject.
2. a. ( ) For the position, boy after boy [has] been named by the principal.
   b. ( ) Plural number, to agree with "boy after boy."
3. a. ( ) The committee which has been appointed [are] already studying the report.
   b. ( ) Plural number, to agree with "committee."
4. a. ( ) The mayor together with the aldermen [approves] of the new city park.
   b. ( ) Singular number, to agree with "mayor."
   b. ( ) Singular number, to agree with "book."
6. a. ( ) The class elected me, who [am] the youngest, as president.
   b. ( ) First person singular number, to agree with "who."
7. a. ( ) The speech will be given by [whoever] the teacher says is the best speaker.
   b. ( ) Objective case, object of preposition "by."
8. a. ( ) [Whomever] the principal found had high grades was permitted to enter the contest.
   b. ( ) Objective case, object of "found."
9. a. ( ) [Who] did you hear the class elected president?
   b. ( ) Objective case, object of "elected."
10. a. ( ) We asked him [whom] he thought the man to be.
    b. ( ) Nominative case, predicate nominative with "to be."
11. a. ( ) There was no chance for you and [I] in that game.
    b. ( ) Nominative case, subject of verb understood.
12. a. ( ) We thought you and [she] would be there.
    b. ( ) Nominative case, subject of "would be."
13. a. ( ) It can not be [them] whom you saw.
    b. ( ) Objective case, object of "cannot be."
    b. ( ) Nominative case, subject of "to report."
15. a. ( ) Alfred is taller than Tom, but not so strong as [him.]
    b. ( ) Objective case, object of "as."
16. a. ( ) Not one of those girls [was] in the room.
    b. ( ) Plural number, to agree with "girls."
17. a. ( ) That is one of the rules which [are] frequently violated.
    b. ( ) Plural number, to agree with "which."
18. a. ( ) Neither the children nor their teacher [goes] home to lunch.
    b. ( ) Singular number, to agree with "teacher."
19. a. ( ) Yesterday we heard of [your] leaving town.
    b. ( ) Possessive case, modifying "leaving."
20. a. ( ) If Frank [were] more forceful, he would win the debate.
    b. ( ) Subjunctive mode.
21. a. ( ) Their boys moved [quicker] than ours did.
    b. ( ) Adverb, modifying "moved."
    b. ( ) Adverb, modifying "seemed."
23. a. ( ) Is there no one [whom] you can ask to come?
    b. ( ) Nominative case, to agree with "one."
24. a. ( ) Mr. Jones requested that we [be] quiet during the lecture.
    b. ( ) Subjunctive mode.
25. a. ( ) The printed page looks [differently] when the ink dries.
    b. ( ) Adverb, modifying "looks."
**THE BARRETT-RYAN LITERATURE TEST**

**Score**

Name ........................................... Age ...... Sex ...... Race ........

Year in school—Fresh. Soph. Jun. Sen. (Draw a line under year of your present classification.)

Room ........................................... School ................................

Town or City ................................. State .......... Date ..............

**DIRECTIONS:** Under each of the following titles of selections, there are four ways of completing each statement. Consider each carefully. Only one of them is correct. In the parenthesis, place the number of the correct one. Look carefully at this example:

**I. LEGEND OF SLEEPY HOLLOW**

A. (2) Ichabod Crane is a—1. storekeeper. 2. country school teacher. 3. lawyer. 4. farmer.

B. (4) The headless horseman is—1. a real ghost. 2. Ichabod’s shadow. 3. the creation of his imagination. 4. Brom Bones in disguise.

In this example, under “A” the true statement is, “Ichabod Crane is a country school teacher.” “Country school teacher” is number 2; therefore the figure 2 is placed in the parenthesis. Under “B” the true statement is, “The headless horseman is Brom Bones.” “Brom Bones” is number 4; therefore the figure is placed in parenthesis.

Time is an important element. Do not waste time, puzzling over uncertainties. First go through, filling in the parenthesis with the numbers that you know are correct. Then guess at the rest.

<table>
<thead>
<tr>
<th><strong>I. THE ANCIENT MARINER</strong></th>
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<tbody>
<tr>
<td>A. ( ) The mariner is guilty of—1. sinking a ship. 2. killing a bird. 3. plundering a village. 4. robbing a man.</td>
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<tr>
<td>C. ( ) In the story, the mariner—1. saves the crew. 2. dies. 3. lives to do penance. 4. lives unchanged by his experience.</td>
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<th><strong>II. AS YOU LIKE IT</strong></th>
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<td>A. ( ) The principal scenes are—1. on the city street. 2. on board a ship. 3. in a forest. 4. in an army camp.</td>
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<td>B. ( ) Orlando spends time in—1. hunting. 2. praying. 3. writing verses. 4. reading.</td>
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<td>C. ( ) The court fool is—1. Amiens.</td>
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<th><strong>III. THE CHAMBERED NAUTILUS</strong></th>
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<th><strong>IV. THE COTTER’S SATURDAY NIGHT</strong></th>
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<td>A. ( ) The prevailing atmosphere is that of—1. industrial life. 2. commercial life. 3. rural life. 4. school life.</td>
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<td>B. ( ) The poem pictures—1. the suffering of the common people. 2. the luxuries of the rich. 3. the desires of the poor for wealth. 4. the contentment of the peasants.</td>
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V. CROSSING THE BAR
A. ( ) The theme is—1. repentance. 2. love. 3. death. 4. forgiveness.

VI. THE DE COVERLEY PAPERS
A. ( ) Sir Roger is a—1. merchant. 2. soldier. 3. country gentleman. 4. clergyman.
B. ( ) Sir Roger is in love with—1. a young girl. 2. an old maid. 3. a widow. 4. no woman.

VII. THE DESERTED VILLAGE
A. ( ) It portrays a—1. blacksmith. 2. farmer. 3. doctor. 4. schoolmaster.
B. ( ) It contains the following lines—
1. “Somewhat back from the village street
   Stands the old-fashioned country seat.”
2. “Full many a flower is born to blush unseen
   And waste its sweetness on the desert air.”
3. “Ill fares the land to hastening ills
   Where wealth accumulates and men decay.”
4. “Of all sad words of tongue or pen
   The saddest are these: ‘It might have been’.”

XIII. ELEGY WRITTEN IN A COUNTRY CHURCHYARD
A. ( ) The scene is that of—1. early morning. 2. afternoon. 3. midnight. 4. evening.
B. ( ) It deals with the fate of—1. the common people. 2. a friend of the poet. 3. a near relative. 4. a great hero.

IX. ENOCH ARDEN
A. ( ) Enoch—1. marries Annie. 2. refuses to marry her. 3. is rejected by her. 4. is prevented from marrying her.
B. ( ) Enoch goes away—1. to war. 2. to see the world. 3. to explore new lands. 4. to make money.
C. ( ) Enoch—1. forgets Annie. 2. returns and condemns her. 3. returns and hides his identity. 4. returns and claims her.

X. EVANGELINE
A. ( ) It tells of a people—1. held in subjection. 2. winning their freedom. 3. starved into submission. 4. being exiled.
B. ( ) Evangeline finds Gabriel—1. in a prison. 2. in a hospital. 3. in an Indian hut. 4. not at all.
C. ( ) In her travels Evangeline is accompanied by—1. her father. 2. her mother. 3. her sister. 4. a priest.

XI. THE HOUSE OF SEVEN GABLES
B. ( ) The principal character is—1. a soldier. 2. a sailor. 3. an old maid. 4. a widow.

C. ( ) It tells of the death of—1. a merchant. 2. a judge. 3. a soldier. 4. a child.
D. ( ) The house finally—1. burns down. 2. is torn down. 3. passes into strangers’ hands. 4. remains in the Pyncheon family.

XII. IL PENSEROSO
A. ( ) It deals with the trouble between—1. Puritans and Cavaliers. 2. Irish and English. 3. Scotch and English. 4. Saxons and Normans.
C. ( ) The principal character is—1. an ambitious queen. 2. a disinterested knight. 3. a dwarf. 4. a sea captain.
D. ( ) An important event is—1. a shipwreck. 2. the finding of a treasure. 3. the burning of a castle. 4. the murder of a king.
E. ( ) Ivanhoe—1. is killed in the tournament. 2. is sentenced to death. 3. marries Rebecca. 4. marries Rowena.

XIV. KING LEAR
A. ( ) The king is—1. a brave warrior. 2. a foolish old man. 3. a wise ruler. 4. an unscrupulous villain.
B. ( ) He retains—1. the love of his children. 2. the support of his wife. 3. his regal power. 4. the devotion of his fool.
C. ( ) A tragic incident is the—1. slaughter of little children. 2. imprisonment in a tomb. 3. putting out of a man’s eyes. 4. burning of the queen.

XV. THE LADY OF THE LAKE
A. ( ) The story opens with the—1. dying of a horse. 2. killing of a deer. 3. losing of a child. 4. shooting of a man.
B. ( ) Rhoderick Dhu—1. marries Ellen. 2. is exiled. 3. resigns his power and lives in seclusion. 4. is mortally wounded in a fight.
C. ( ) Ellen—1. enters a convent. 2. marries Malcolm Graeme. 3. is drowned in the lake. 4. dies of disappointment.

XVI. THE LAST LEAF
A. ( ) It treats of—1. the coming of winter. 2. a dying tree. 3. an old man. 4. the finishing of a story.

XVII. LORNA DOONE
A. ( ) At the beginning of the story Lorna lives—1. in a tavern. 2. on a
farm. 3. among thieves. 4. in a boarding school.

B. ( ) She marries—1. a farmer. 2. a soldier. 3. a courtier. 4. a sea captain.

C. ( ) The Doones are—1. a Scottish clan. 2. a military company. 3. an Indian tribe. 4. a band of outlaws,

D. ( ) The Doones finally—1. live in peace. 2. are subdued by their enemies. 3. go to a foreign country. 4. die of a pestilence.


A. ( ) The central theme is—1. ambition. 2. revenge. 3. love. 4. duty.

B. ( ) An important element is contributed by—1. sailors. 2. weird women. 3. merchants. 4. fairies.

C. ( ) Most of the action is in—1. England. 2. Scotland. 3. France. 4. Italy.

D. ( ) Macbeth finally—1. rules in peace. 2. flees into exile. 3. is killed by Macduff. 4. is killed by Banquo.


B. ( ) The climax in the story is—1. a sudden death. 2. a court trial. 3. a devastating fire. 4. a duel.

C. ( ) An important element is—1. a man goes insane. 2. a man becomes jealous of his brother. 3. a woman disguises as a man. 4. a man loses faith in his wife.

D. ( ) A conspicuous character is—1. a slave. 2. a king. 3. a Greek. 4. a Jew.

A. ( ) The principal part of the play is—1. on an island. 2. in a castle. 3. in a forest. 4. in a city.

B. ( ) The play deals with—1. love. 2. ambition. 3. revenge. 4. patriotism.

C. ( ) An important element in it is—1. soldiers. 2. fairies. 3. witches. 4. ghosts.

D. ( ) The play within the play is acted by—1. professional actors. 2. members of the court. 3. workmen. 4. students.

A. ( ) Oliver—1. goes to sea. 2. joins the army. 3. falls into a den of thieves. 4. makes a big fortune.

B. ( ) The author reveals—1. hardships of pioneer life. 2. inadequacy of the courts. 3. vice in military life. 4. corruption in the church.

C. ( ) Fagan is—1. a villain. 2. a priest. 3. an army officer. 4. an honest workman.

A. ( ) The raven is perched—1. on the chamber door. 2. upon the bust of Pallas. 3. above a volume of forgotten lore. 4. upon the back of the old armchair.

B. ( ) The raven finally—1. fluttered out the window. 2. fled to the Plutonian shore. 3. floated from his perch to the floor. 4. still is sitting.

XXIII. THE PASSING OF ARTHUR

(in IDYLLS OF THE KING)

A. ( ) It is written in—1. blank verse. 2. ballad style. 3. rimed couplet. 4. sonnet form.

B. ( ) Arthur is—1. burned on a funeral pyre. 2. carried off on a ship. 3. buried in a church. 4. buried on a battle field.

C. ( ) Excalibur is—1. a brave soldier. 2. a war horse. 3. a sword. 4. a ship.

XXIV. THE PILOT

A. ( ) The action takes place—1. in the Sixteenth Century. 2. during the Napoleonic Wars. 3. during the Revolutionary War. 4. during the Civil War.


XXV. THE PIT AND THE PENDULUM

A. ( ) The emotion emphasized is—1. sorrow. 2. anger. 3. terror. 4. love.

B. ( ) The main character is threatened with death from—1. illness. 2. starving. 3. freezing. 4. being burned.

XXVI. THE PRISONER OF CHILLON

A. ( ) He is cast into prison—1. alone. 2. with his father. 3. with his brothers. 4. with his son.

B. ( ) He—1. dies in prison. 2. is freed and rejoices. 3. escapes through his own efforts. 4. gains his freedom with a sigh.

XXVII. THE SKETCH BOOK


B. ( ) It contains a sketch of—1. the Coliseum. 2. Notre Dame. 3. Westminster Abbey. 4. the Alhambra.


XXVIII. SILAS MARNER

A. ( ) The story centers about—1. a murder. 2. a duel. 3. an adoption of a child. 4. a mistaken identity.

B. ( ) Dunstan Cass—1. marries Eppie. 2. is sent to prison. 3. is accidentally drowned. 4. is killed by a horse.

C. ( ) At the end of the story Eppie—1. is living with her father. 2. is living in the Marner cottage. 3. is living in the Winthrop home. 4. dies.
XXIX. SOHRAB AND RUSTUM
B. ( ) The most important incident is—1. a father kills his son. 2. a boy kills his father. 3. a boy kills his brother. 4. a rebel kills a king.
C. ( ) The chief feeling aroused is—1. anger. 2. hatred. 3. sympathy. 4. joy.

XXX. A TALE OF TWO CITIES
B. ( ) The theme is—1. A little child shall lead them. 2. Do unto others as you would they should do unto you. 3. Greater love hath no man than this, that he lay down his life for his friend. 4. Thou shalt not bear false witness.

XXXI. TO A WATERFOWL
A. ( ) It teaches—1. danger is ever near. 2. prepare for the future. 3. God will guide me. 4. it is sinful to be sad.
B. ( ) The bird is—1. on the water. 2. in the air. 3. in a tree. 4. on the ground.

XXXII. TREASURE ISLAND
A. ( ) An important character is—1. a girl. 2. a boy. 3. an army officer. 4. a merchant.
B. ( ) The treasure is—1. salvage from a wrecked ship. 2. a miser's hoard. 3. pirate gold. 4. nuggets from a gold mine.
C. ( ) At the end of the story the treasure—1. is lost in the sea. 2. is returned to former owner. 3. is confiscated by government officials. 4. is distributed among honest people.

XXXIII. VANITY FAIR
A. ( ) The principal character is—1. a beautiful Jewess. 2. an unscrupulous woman. 3. an expert carpenter. 4. a minister of the gospel.
C. ( ) Colonel Dobbin—1. marries Becky. 2. marries Amelia. 3. is shot as a deserter. 4. is killed in battle.
D. ( ) The story is about—1. religious life. 2. sea life. 3. social life. 4. industrial life.

XXXIV. THE VIRGINIAN
B. ( ) The Virginian—1. finds a gold mine. 2. becomes owner of a ranch. 3. becomes a Virginia business man. 4. joins the army.
C. ( ) Sir Launfal is able to find the Grail because of his—1. honesty. 2. purity. 3. charity. 4. shrewdness.
OTIS GROUP INTELLIGENCE SCALE
Devised by ARTHUR S. OTIS

ADVANCED EXAMINATION: FORM A

Examination Number.............. Name.................................................
(First name, initial, and last name)

Age last birthday................ years. Birthday............................... 
(Tell in figures) (Month, day)

School........................................ Grade..................

City........................................ Date................................
(Month, day, year)

(Do not write below this line.)

Remarks or Further Data

Test | Score
---|---
1   |  
2   |  
3   |  
4   |  
5   |  
6   |  
7   |  
8   |  
9   |  
10  |  
11  |  
12  |  
13  |  
14  |  
15  |  

Total Score
Norm
IB
PR

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To the Examiner: Do not administer this test without first reading carefully the Manual of Directions. The Manual must be ordered extra.
Following Directions

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Sample problem: Write the fifth letter of the alphabet. ....................... ( E )

Begin here:

1. Do you understand that each letter is to be a capital made like printing and put in the parenthesis after the problem? If so, write C in the parenthesis ....................... ( ) 1
2. Will you remember not to ask any questions during the examination? If so, write Q ....................... ( ) 2
3. Will you remember not to look toward the paper of any other pupil during the examination? If so, write L ....................... ( ) 3
4. Will you remember not to turn over your booklet or any page of it at any time unless you are told to? If so, write B; if not, write N ....................... ( ) 4
5. Write the letter O ....................... ( ) 5
6. Write the eighth letter of the alphabet ....................... ( ) 6
7. Write the same letter that you were told to write in the fifth problem ....................... ( ) 7
8. Write the letter which follows the third letter of the alphabet ....................... ( ) 8
9. Write the letter which the letter L follows in the alphabet ....................... ( ) 9
10. If K comes after R in the alphabet, write K; if not, write R ....................... ( ) 10
11. Suppose all the even numbered letters in the alphabet (that is, the 2d, 4th, 6th, etc.) were crossed out. The fifth letter left, not crossed out, would be what letter? ....................... ( ) 11
12. Write the letter which follows the letter which comes next after B in the alphabet. ....................... ( ) 12
13. If E and F appear together in the alphabet, write E, unless T and Z also appear together in the alphabet, in which case write T instead ....................... ( ) 13
14. Write the letter which is the third letter to the right of the letter which is midway between K and O ....................... ( ) 14
15. Suppose that the first and second letters of the alphabet were interchanged, also the third and fourth, the fifth and sixth, etc. Write the letter which would then be the 14th letter in the alphabet ....................... ( ) 15
16. A certain letter is the second letter to the left of another letter. This other letter is the fifth letter to the right of Q. What is the “certain letter” first mentioned? ....................... ( ) 16
17. A certain letter is the fourth letter to the right of another letter. This other letter is midway between two other letters. One of these last two letters is next after E in the alphabet and the other is just before K in the alphabet. What is the “certain letter” first mentioned? ....................... ( ) 17
18. If the letters in the word IF appear in the same order that they do in the alphabet and if the same is true of the letters in the word AN, write the letter Z. But if this is true of only one of these words, write the last letter of that word ....................... ( ) 18
19. Find the letter which, in this sentence, appears a second time nearest the beginning. Write it, using a capital ....................... ( ) 19
20. Find the two letters in the word AFTER which have just as many letters between them in the alphabet as in the word. Write the one of these two letters that comes first in the alphabet ....................... ( ) 20

Score: .......................
TEST 2

Opposites

Samples:
- up (short, down, small, low, young)
- hot (warm, ice, dark, cold, fire)

Directions. Look at the first word on each line, think what word means exactly the opposite of it, find that word among the five words in parenthesis on that line and draw a line under it.

Begin here:

1. east (north, west, south, pole, equator)
2. yes (may-be, wrong, no, sure, nothing)
3. top (bottom, side, cover, inside, feet)
4. before (late, now, soon, when, after)
5. difficult (hard, quick, soft, easy, common)
6. friend (brother, acquaintance, enemy, wife, stranger)
7. succeed (win, decline, fail, accede, try)
8. command (officer, shout, order, obey, soldier)
9. beautiful (crooked, handsome, old, ugly, dirty)
10. brave (painful, fear, weak, stingy, cowardly)
11. pride (sorrow, humility, miserable, conceit, proud)
12. expand (burst, smaller, contract, vanish, stay)
13. genuine (coarse, counterfeit, adulterated, worthless, impure)
14. help (person, work, push, give, hinder)
15. love (like, anger, hate, strange, lover)
16. graceful (rough, homely, miserable, awkward, stout)
17. extravagant (miser, humble, miserable, awkward, poor, wasteful)
18. cause (reason, because, origin, effect, why)
19. abolish (alter, create, continue, destroy, change)
20. loyal (treacherous, enemy, thief, coward, jealous)
21. always (sometimes, often, occasionally, seldom, never)
22. fickle (silly, constant, stationary, solid, sober)
23. therefore (since, why, may-be, there, cause)
24. however (nevertheless, moreover, whether, even, never)
25. unless (and, therefore, however, also, if)

Score
Disarranged Sentences

Samples:
1. men money for work .................................. (true false)
2. uphill rivers flow all .................................. (true false)
3. ocean waves the has .................................. (true false)

Directions. The words on each line below make one sentence if put in order. If the sentence the words would make is true, underline the word true at the side of the page. If the sentence they would make is false, underline the word false.

Begin here:

1. eat grass cows .................................. (true false)
2. sail ocean ships the on ............................... (true false)
3. sun morning the the in sets .......................... (true false)
4. trees birds nests the in build .......................... (true false)
5. mountains live the in whales .......................... (true false)
6. comes Christmas a but year once ..................... (true false)
7. float iron water on will .............................. (true false)
8. days there in are week seven a ..................... (true false)
9. usually are of made tables wood ..................... (true false)
10. has short very a a neck giraffe ..................... (true false)
11. cream ice children like most ..................... (true false)
12. milk bees flowers gather the from ..................... (true false)
13. obtained sea sugar from is water ..................... (true false)
14. fuel wood are coal and for burned ..................... (true false)
15. substances light lead gold and are very .............. (true false)
16. rivers lakes and many desert has a ..................... (true false)
17. moon earth the from feet twenty the is .............. (true false)
18. hump camel has a his a back on ..................... (true false)
19. grow and apples ground oranges the in .............. (true false)
20. music fond people many are of ..................... (true false)
21. and eat good gold silver to are ..................... (true false)
22. clouds rain sky from comes the the in .............. (true false)
23. mile a a a travel snail in can minute ..................... (true false)
24. automobile pocket man his keeps a his in ..................... (true false)
25. vote persons twenty-one cannot under ..................... (true false)

Right ............... Wrong ............... Score ...............
DIRECTIONS. Read each proverb, find the statement that explains it, and put the number of that statement in the parenthesis before the proverb.

Proverbs (Group 1)

( ) Make hay while the sun shines.
( ) A drowning man will grasp at straws.
( ) A stitch in time saves nine.
( ) Rats desert a sinking ship.
( ) In a calm sea every man is a pilot.
( ) Destroy the lion while it is young.
( ) He who would eat the kernel must crack the nut.
( ) One swallow does not make a summer.
( ) People who live in glass houses must not throw stones.
( ) A mouse must not think to cast a shadow like an elephant.

Statements to Explain Proverbs in Group 1

1. It pays to attend to troubles before they get worse.
2. Leadership is easy when all goes well.
3. Make the best of your opportunities.
4. Those who would reap rewards must work for them.
5. It pays to do only one thing at a time.
6. Desperate people cling to absurd hopes.
7. False friends flee from us in disaster.
8. Weed out bad habits before they are too firmly established.
9. It is best to be silent when there is nothing to say.
10. Those who have faults should not criticize others.
11. Do not attempt the impossible.
12. A single sign is not convincing.

Proverbs (Group 2)

( ) Every rose has its thorn.
( ) A tree is known by its fruits.
( ) All is not gold that glitters.
( ) Where there is much smoke there must be some fire.
( ) No wind can do him good who steers for no port.
( ) Plant the crab tree where you will, it will not bear sweet apples.
( ) A bird in the hand is worth two in the bush.
( ) Too many cooks spoil the broth.
( ) Meddle not with dirt — some of it will stick to you.
( ) It is a long road that has no turn.

Statements to Explain Proverbs in Group 2

1. Environment will not change one’s nature.
2. There is no happiness without its pain or sorrow.
3. Appearances are often deceptive.
4. It is better to be content with little than to gamble for more.
5. One cannot have the same luck forever.
6. No object can be attained without some sacrifice.
7. Deeds show the man.
8. We cannot help those who have no object in life.
9. Suspicions usually have some basis.
10. Association with evil is sure to leave its effect.
11. Who undertakes too much accomplishes little.
12. Division of responsibility brings poor results.

Score: .................
TEST 5

Arithmetic

DIRECTIONS. Place the answer to each problem in the parenthesis after the problem. Do any figuring you wish on the margin of the page.

1. If a boy had 10 cents and earned 5 cents, how much money did he have then? .................................. ( ) cents 1
2. At 4 cents each, how much will 12 pencils cost? .................................. ( ) cents 2
3. If a man had $25 and spent $10, how much money did he have left? .. ( ) dollars 3
4. At 6 cents each, how many pencils can be bought for 48 cents? .... ( ) pencils 4
5. A boy spent 20 cents and then earned 30 cents. How much more money did he have than at first? ..................... ( ) cents 5
6. How far can a train go in 5 hours at the rate of 40 miles per hour? .... ( ) miles 6
7. How long will it take a glacier to move 1000 feet at the rate of 100 feet a year? .................................. ( ) years 7
8. If 2½ yards of cloth cost 20 cents, what will 10 yards cost? .................. ( ) cents 8
9. If 2 pencils cost 5 cents, how many pencils can be bought for 50 cents? ( ) pencils 9
10. If a man walks east from his home 7 blocks and then walks west 4 blocks, how far is he from his home? ......................... ( ) blocks 10
11. If a boy can run at the rate of 5 feet in ¼ of a second, how far can he run in 10 seconds? .................................. ( ) feet 11
12. A ship has provisions enough to last a crew of 20 men 50 days. How long would they last a crew of 40 men? ......................... ( ) days 12
13. One schoolroom has 7 rows of seats with 8 seats in each row, and another schoolroom has 6 rows of seats with 9 seats in each row. How many more seats does one room have than the other? ........ ( ) seats 13
14. If 10 boxes full of oranges weigh 500 pounds, and each box when empty weighs 5 pounds, what do all the oranges weigh? ................... ( ) pounds 14
15. Town X is 30 miles north of Town Y. Town Y is 15 miles north of Town Z. How far is Town Z from Town X? .................. ( ) miles 15
16. If 3½ yards of cloth cost 70 cents, what will 2½ yards cost? ............ ( ) cents 16
17. If a strip of cloth 36 inches long will shrink to 33 inches when washed, how long will a 48-inch strip be after shrinking? ................ ( ) inches 17
18. If Frank can ride a bicycle 300 feet while George runs 200 feet, how far can Frank ride while George runs 300 feet? ....................... ( ) feet 18
19. A hotel serves a mixture of 3 parts cream and 2 parts milk. How many pints of cream will it take to make 25 pints of the mixture? .... ( ) pints 19
20. If a wire 20 inches long is to be cut so that one piece is ¾ as long as the other piece, how long must the longer piece be? ................. ( ) inches 20

Score ..............
DIRECTIONS. Each problem asks a question that is answered by a number. Write the answer to each problem in the parenthesis after the statement of the problem.

Sample problem:

Look at Fig. I. What number is in the circle but not in the rectangle? .......... (1)

1. What number in Fig. I is in the rectangle but not in the circle? ............ ( ) 1
2. What number in Fig. I is in both the rectangle and the circle? .......... ( ) 2
3. Look at Fig. II (at the right). What number is in the rectangle but not in the circle nor in the triangle? ............ ( ) 3
4. What number in Fig. II is in the rectangle and in the triangle but not in the circle? ( ) 4
(The remaining questions all refer to Fig. II.)

5. What number is in the circle and in the rectangle and in the triangle? .......... ( ) 5
6. What is the smallest number that is in the triangle but not in the circle nor in the rectangle? ......................................................... ( ) 6
7. What is the largest number that is in the circle but not in the triangle nor in the rectangle? ......................................................... ( ) 7
8. Write the number that is in the lowest space that is in the triangle and in the circle but not in the rectangle ......................................................... ( ) 8
9. Find the geometrical figure (circle, triangle, or rectangle) that has the least number of spaces in it. Write that number of spaces ......................................................... ( ) 9
10. How many spaces are there each of which is in all three geometric figures? ......................................................... ( ) 10
11. How many spaces are there each of which is in one and only one geometric figure? ......................................................... ( ) 11
12. How many spaces are there each of which is in two and only two geometric figures? ......................................................... ( ) 12
13. We may say that space 12 is like space 3 because they are both in the circle and triangle but not in the rectangle. Any space is like another which is in exactly the same geometrical figures. Write the number of the space which is like space 6 ......................................................... ( ) 13
14. Write the number of the space which is like space 1 ......................................................... ( ) 14
15. How many other spaces are there like space 9? ......................................................... ( ) 15
16. There is no other space like space 5, so we may call space 5 unique (yûneek). Any space is unique which has no other space like it. Examine spaces 8, 9, 10, 11, 12, and 13 in order until you find another unique space. Write its number ......................................................... ( ) 16
17. How many unique spaces are there in Fig. II? ......................................................... ( ) 17
18. What is the greatest number of unique spaces which it is possible to make by overlapping a circle, triangle, and rectangle? (You may draw any figures you wish on the margin of this page) ......................................................... ( ) 18
19. Also what is the least number of unique spaces possible? ......................................................... ( ) 19
20. What is the greatest number of spaces which it is possible to make by overlapping a circle, triangle, and rectangle? ......................................................... ( ) 20

Score ..................
TEST 7

Analogies

\[
\begin{align*}
\text{finger} : \text{hand} & \rightarrow \text{toe} : ( ? ) \\
\text{clothes} : \text{man} & \rightarrow \text{fur} : ( ? ) \\
\text{tall} & \rightarrow \text{short} : \text{fat} : ( ? )
\end{align*}
\]

Samples:

\[
\begin{align*}
\text{foot}, \text{knee}, \text{arm}, \text{shoe}, \text{nail} \\
\text{coat}, \underline{\text{animal}}, \text{hair}, \text{skin}, \text{cloth} \\
\text{man}, \text{wide}, \text{thin}, \text{boy}, \text{heavy}
\end{align*}
\]

DIRECTIONS. The first sample means: Finger is to hand as toe is to what? Underline the word on each line that should go in the parenthesis in place of the question mark.

Begin here:

1. hand : arm \rightarrow \text{foot} : ( ? )
2. peeling : banana \rightarrow \text{shell} : ( ? )
3. wool : sheep \rightarrow \text{feathers} : ( ? )
4. coal : locomotive \rightarrow \text{automobile} : ( ? )
5. man : woman \rightarrow \text{brother} : ( ? )
6. automobile : wagon \rightarrow \text{motorcycle} : ( ? )
7. hospital : the sick \rightarrow \text{criminals} : ( ? )
8. hat : head \rightarrow \text{thimble} : ( ? )
9. captain : ship \rightarrow \text{mayor} : ( ? )
10. better : good \rightarrow \text{worse} : ( ? )
11. grass : cattle \rightarrow \text{bread} : ( ? )
12. large : object \rightarrow \text{loud} : ( ? )
13. king : kingdom \rightarrow \text{president} : ( ? )
14. revolver : man \rightarrow \text{ bee} : ( ? )
15. egg : bird \rightarrow \text{plant} : ( ? )
16. education : ignorance \rightarrow \text{poverty} : ( ? )
17. circle : square \rightarrow \text{sphere} : ( ? )
18. point : line \rightarrow \text{line} : ( ? )
19. sanitation : disease \rightarrow \text{accident} : ( ? )
20. ordinary : exceptional \rightarrow \text{many} : ( ? )
21. sunlight : darkness \rightarrow \text{stillness} : ( ? )
22. peninsula : land \rightarrow \text{ocean} : ( ? )
23. ellipse : circle \rightarrow \text{square} : ( ? )
24. violence : anger \rightarrow \text{love} : ( ? )
25. evolution : revolution \rightarrow \text{crawl} : ( ? )

Score
TEST 8

Similarities Test

Samples: hat, collar, glove .......... hand, cane, head, shoe, house
rose, daisy, violet .......... bush, red, plant, bed, pansy
desk, bed, chair .......... book, table, floor, pencil, coat

DIRECTIONS. Find the way in which the first three things on a line are alike. Then look at the five other things on the same line and draw a line under the one that is most like the first three.

1. red, white, green .......... rose, paper, grass, soft, blue .......... 1
2. apple, peach, pear .......... seed, tree, plum, juice, peel .......... 2
3. pan, bowl, basket .......... pail, handle, knife, fork, spoon .......... 3
4. snake, cow, sparrow .......... tree, doll, pig, feather, skin .......... 4
5. ship, bicycle, carriage .......... sail, automobile, wheel, ocean, harness .......... 5
6. cannon ball, wire, penny .......... dollar bill, bone, string, pencil, key .......... 6
7. president, captain, general .......... ship, army, king, republic, soldier .......... 7
8. book, teacher, newspaper .......... pencil, magazine, ink, card, box .......... 8
9. ax, knife, shears .......... hammer, razor, hoe, rake, fork .......... 9
10. ivory, snow, milk .......... butter, rain, cold, cotton, water .......... 10
11. day, say, gay .......... night, said, joy, happy, lay .......... 11
12. nut, turnip, potato .......... shell, tree, bush, milk, apple .......... 12
13. strong, bad, fast .......... and, man, soon, round, come .......... 13
14. generous, kind, honest .......... strong, selfish, wise, loyal, rich .......... 14
15. joy, anger, fear .......... habit, memory, hate, life, hearing .......... 15

Continue below in the same way.

Sample:

Score .................
**Narrative Completion**

**DIRECTIONS.** For each numbered blank in the story, choose the best word of the three in the list having the same number as the blank. Underline the word you choose. You may write these words in the blank spaces if you wish, but only the underlining counts. Do nothing about the blanks that are not numbered.

---

**The Reward of Kindness**


Not long after, the [23] was blamed for a cruel deed which he had not [24]. The [25] said: "He [26] die. Throw [27] into the lion's den." So the king's men [28] shepherd and put him into the [29] with a great [30]. It was the very [31] the shepherd had [32] near the forest. And lo! Instead of [33] the [34], the lion only licked his hand.

The [35] was amazed. He [36] the shepherd to [37] his power over the [38]. Then the [39] how he had [40].

---

**Underline words here**

1. time 2. place 3. man 4. 
2. man 3. lion 4. dog 5. 
3. street 4. garden 5. forest 6. 
5. back 6. hand 7. foot 8. 
6. came 7. limped 8. ran 9. 
14. must 15. may 16. will 17. 
25. many 26. other 27. cruel 28. 
27. explained 28. gave 29. kept 30. 
28. softened 29. relieved 30. satisfied

---

**Score**

---

Have you heard this story before?
TEST 10
Otis Adv. Exam. A

Memory

DIRECTIONS. Read each question and if the right answer, according to the story, is yes, draw a line under the word yes. If the right answer is no, draw a line under the word no. But if you do not know the right answer, because the story didn’t say, draw a line under the words didn’t say.

<table>
<thead>
<tr>
<th>Was the story about a king? ............................ (yes no didn’t say)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Samples:</td>
</tr>
<tr>
<td>Was the king’s daughter sixteen years old?                      (yes no didn’t say)</td>
</tr>
<tr>
<td>Was she ugly? ................................. (yes no didn’t say)</td>
</tr>
</tbody>
</table>

Begin here:

1. Was the king fond of hearing stories? ........................ (yes no didn’t say) 1
2. Did the king offer his daughter to any one who could tell him a story that would last forever? ........................ (yes no didn’t say) 2
3. Did he offer all his kingdom also? ................................ (yes no didn’t say) 3
4. Did he say, “but if he fails he shall be cast into prison”? ........................ (yes no didn’t say) 4
5. Was the king’s daughter pretty? ................................ (yes no didn’t say) 5
6. Did she like stories, too? ........................................ (yes no didn’t say) 6
7. Did the story say that after a long time a young man came and offered to tell the king a story? ........................ (yes no didn’t say) 7
8. Did the first man’s story last a week? ............................ (yes no didn’t say) 8
9. Was the first man’s head cut off? ................................ (yes no didn’t say) 9
10. Did the king then order another man to tell him a story? ....... (yes no didn’t say) 10
11. Did each man’s story last longer than that of the one before? .... (yes no didn’t say) 11
12. Were all the young men who came to tell stories handsome? ..... (yes no didn’t say) 12
13. Did a handsome young man say to the king, “I can tell you a story that will last forever”? ........................ (yes no didn’t say) 13
14. Did the king beg the young man not to try? ........................ (yes no didn’t say) 14
15. Was the king’s daughter afraid he would fail? .................... (yes no didn’t say) 15
16. Did she love him and so not want to see him killed? ............. (yes no didn’t say) 16
17. Did the young man tell the princess to have no fear? ............ (yes no didn’t say) 17
18. According to the young man’s story, did a rich man order a huge granary built? ........................ (yes no didn’t say) 18
19. Did he have it filled with oats to the very tip-top? ............... (yes no didn’t say) 19
20. Was a very small hole left between the bricks near the ground? .... (yes no didn’t say) 20
21. Was the hole just big enough to let one little ant through? ..... (yes no didn’t say) 21
22. Did the young man say that one day a little ant went in and carried off a grain of wheat? ........................ (yes no didn’t say) 22
23. Did he say that the next day another little ant went in and carried off another grain of wheat? ........................ (yes no didn’t say) 23
24. Did the king plead with the young man to tell him what happened after that? ............................................ (yes no didn’t say) 24
25. Did the young man say, “Why, after that the ants just kept on carrying off the wheat”? ........................ (yes no didn’t say) 25
26. Did the king finally say, “Man, man, your story will last forever”? (yes no didn’t say) 26
27. Did he say, “Take my daughter and half my kingdom and don’t speak to me again”? ........................ (yes no didn’t say) 27
28. Did the young man marry the princess? ............................ (yes no didn’t say) 28
29. Did the king ever want to hear another story? ...................... (yes no didn’t say) 29
30. Was the name of this story, “The story that had no end”? ........ (yes no didn’t say) 30

Have you heard this story before? ......................... (yes no)