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A Comparative Study of the Relative Achievement of the Training School & Non-Training School Pupils

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A COMPARATIVE STUDY OF THE RELATIVE ACHIEVEMENT OF THE TRAINING SCHOOL AND NON-TRAINING SCHOOL PUPILS

BY

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CHAPTER I

INTRODUCTION

Frpm the days of Cyrus W.Pierce's training school, in 1839, until the present time there have been student teachers or apprentice teachers, and from the beginning of student teaching there has been much discussion concerning the result of practice teaching upon the achievement of the pupils.

In every state normal school and teachers college in the United States there is a training department and some type of laboratory or training school available for student teaching.[1]

There are many conflicting opinions concerning the effects of student teaching. Some parents object to having their children practiced upon; occasionally some school-board member voices his objections; even some pupils dislike being in classes where directed teaching is done.

Many investigations have been made, by educators who are interested in this phase of education, attempting to convince the public that well-organized, closely-supervised student teaching does not decrease the achievement of the pupils in the training schools. At least two Master of Arts theses[2] have been written

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1 Charles C.Sherrod, "The Training School," National Educational Journal, Vol.20 (January,1931),pp.17-18.

2 F.C.Seamster, The Achievement of Pupils in Public and Training School, Master of Arts Thesis, University of Colorado Studies, 103-104, University of Colorado (December,1930).

Sara G.Palmer, Comparative Study of the Achievement of Children in the Training School and the Non-Training School, Master of Arts Thesis, University of Pittsburg Bulletin,Pittsburg (November,1930).

recently, making comparative studies of the achievement of training and non-training school pupils. The result of the study made by Mr.Seamster indicated that the pupils in the public school showed a slight advantage, but the similarity in achievement was far greater than the difference.

Mr. Ramsey[3] has stated in a recent magazine article that supervised teaching may be carried on under the guidance of skillful supervision of critic teachers with no attendant danger to the pupils taught, but with considerable profit to them.

Another investigator, Mr.V.E.Stansbury,[4] has published recently an article stating that the student teaching should be done under conditions as nearly like the actual situations, preferably in a city public school, as possible. If this is done under expert supervision, the pupils are not handicapped in any way by practice teaching.

William C.Bagley[5] has said that the only way to protect the pupils of the training school is to hold the student teachers strictly responsible for the results in instruction.

It has been and is the aim of the critic teachers and the director of the Radford State Teachers College Training School to carry out the best methods advocated by the leading educators of our country.

The writer, having been employed as a critic or supervising

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3 E.E.Ramsey,"The Value of Supervised Teaching,"Teachers College Journal,Vol.2 (September,1930),pp.3-4.

4 V.E.Stansbury,"The High Cost of Inefficiency,"School and Society, Vol.35 (January 30,1932),pp.156-158.

5 W.C.Bagley,"The Place of Applied Philosophy in Judging Student Teaching,"Educational Administration and Supervision,Vol.17 (May, 1931),pp.330-335.

teacher in a city training school, has a personal interest in student teaching and student teachers. Frequently patrons voice their opinions concerning the work done in the training school. While many parents are well pleased with the results of student teaching, there are some who believe that the type of work given in the training school is inferior to that done in the public schools.

The major purpose of this study is to endeavor to answer, to some extent, a few of the many questions, arising from day to day, concerning the effect of student teaching upon the achievement of the pupils in the training school.

CHAPTER II

THE NATURE OF THE PROBLEM AND THE PROCEDURES USED

In setting up this problem a group of forty-five children who had attended during their entire school life the training school was selected. A similar group of pupils who had not attended the training school was selected for comparison with the training group. The pupils were chosen from grades four, five, six, and seven of the city-training school of Radford State Teachers College at East Radford, Virginia.

The children from the above-mentioned school are from the same area of the city. There being no tuition charged, the training group represented was unselected, and similar to the pupils found in any city public school. Both groups of pupils are of the same environment, a number of the rooms of the same building, being used for the training work and the remainder for regular public school work.

Previous to September, 1931, the qualifications of the critic teachers were four years of college training and teaching experience. In order to raise the standards of the institution, the minimum scholastic training has been raised to that of the Master of Arts Degree.

The supervising teacher is required to teach at least 40 per cent of the time, and to supervise closely the work done by the student teachers.

Prerequisites for directed teaching.- Twelve session hours of educational courses (Principles of Education, Introduction to Education, School Management, Educational Measurements, Health

Education, Psychology, and other related courses) are required of all students, and an average of "C" must be made on all academic and professional courses. Students who are planning to teach the elementary grades must attain sophomore standing, while those preparing for high-school positions must be in the fourth year of college training before they are allowed to take directed teaching.

The teaching period.- The teaching period is for the entire quarter of twelve weeks, during which time the students spend the day in the classroom. The directed teaching course consists of the teaching proper and parallel courses, Technique of Instruction and Materials of Instruction. Credit of five session hours is given when the courses have been completed. The teaching period consists of from five to ten days of observation and participation, during which period the student assists in the routine duties of the classroom, gives remedial aid when necessary, observes in other rooms of the training school, and familiarizes herself with the pupils, other teachers, and the materials of instruction.

After the student has adapted herself to the situation, she is required to teach two lessons daily, or groups of pupils in different subjects. Lesson plans, which are submitted to the supervising teacher the day before the lesson is to be taught, are inspected, and are returned to the student teacher with suggestions when necessary. Unit plans, which comprise subject matter, illustrative material, and check-up to be used, on certain topics are required of each teacher. Frequently these plans contain materials for teaching the entire quarter.

The director of the training school and the supervising teachers

hold conferences with the student teachers from eight to ten hours each week. From four to six students are given practice teaching in each room during the quarter.

Aims of this study.- In this study the writer has had in mind the following specific aims:

1. To determine the effect of student teaching upon the achievement of the pupils.

2. To determine the subjects in which the student teachers are deficient.

3. To determine in which subjects the pupils need more drill.

4. To make a comparison of the relative achievement of the training school and non-training school pupils.

5. To make a comparison of the work done by the critic teachers and the student teachers and that done by the public-school teachers.

CHAPTER III

EQUATING THE TWO GROUPS OF PUPILS

The groups of pupils selected for comparison in this study were equated according to their chronological ages, intelligence quotients, and educational quotients in so far as it was possible. The scores used were those resulting from the Otis Intelligence Test, which was administered on October 6,1931.

Three different sets of scores for the Stanford Achievement Tests were available for thirty-seven pupils of each group. These tests were administered in January,1931, May,1931, and January,1932.

In February,1932, the writer administered to both groups of pupils the following tests:-the Sangren-Woody Reading Test:Form A, the New Stanford Arithmetic Test (Reasoning and Computation): Form V, the New Stanford Language Usage Test:Form V, and the New Stanford Literature Test:Form Z.

One hundred words were selected from the Buckingham Extension of Ayres' Spelling Scale, and these words were given to both groups of pupils, the scores being ranked according to the standard for the grades of the pupils.

When the tests had been scored and ranked, it was found that two of the pupils of the training group had extremely high intelligence quotients, and to equate the groups to a greater extent, the scores of those pupils were eliminated, leaving a total of thirty-five pupils in the training group and thirty-seven in the non-training group.

Each group of scores made on the tests was ranked and tabulated

very carefully. Comparisons have been made of the two groups in the following manner;- range, mean, median, lower quartile, upper quartile, quartile deviation, average deviation, and standard deviation. In addition to the above-mentioned comparisons the per cent of each group making scores of average or standard, above standard, and below standard on the tests given was found and used as a basis of comparison.

TABLE I

COMPARISON OF TRAINING AND NON-TRAINING PUPILS IN TERMS OF THEIR CHRONOLOGICAL AGES IN MONTHS.

	Training Group	Non-Training Group
Range	63	62
Mean	144.37±1.80	143.53±1.62
Median	141.70	141.50
Lower quartile	133.37	133.00
Upper quartile	156.25	154.00
Quartile deviation	11.44	10.50
Average deviation	12.45	11.10
Standard deviation	15.78	14.67

Table I shows clearly a close correlation between the chronological ages of the training school and the non-training school pupils.

Since a small number of pupils was used in this study, it is necessary to determine the reliability of the scores. By finding the probable error of the mean, it is found that the scores of all the pupils in the training group would fall between 144.37-1.80 or 142.57 and 144.37+1.80 or 146.17; those of the non-training group would fall between 143.53-1.62 or 141.91 and 143.53+1.62 or 145.15.

The difference between the groups is so slight that it is doubtful if it has any statistical significance. From the criteria used in this phase of comparison it can be said that the groups are approximately of equal ages, chronologically.

TABLE II

COMPARISON OF THE TRAINING AND NON-TRAINING PUPILS ACCORDING TO THE INTELLIGENCE QUOTIENTS.

	Training Group	Non-Training Group
Range	54	54
Mean	90.19±1.60	89.17±1.34
Median	91.37	89.64
Lower quartile	79.25	85.00
Upper quartile	101.87	97.00
Quartile deviation	11.68	6.00
Average deviation	12.12	8.76
Standard deviation	14.07	11.43

Table II shows that, although the ranges are the same, the quartiles and quartile deviation of the non-training group are more closely grouped around the mid-point. The average and standard deviations are greater, 3.36 and 2.64, respectively, for the training group. The probable error of the difference in the means of the two groups is 2.52, but since the critical ratio is small, this is of no great significance.

TABLE III

COMPARISON OF THE INTELLIGENCE QUOTIENTS OF THE TWO GROUPS WITH THE NORMS OR STANDARDS.[1]

	Training Group	Non-Training Group
Above normal	10%	8%
Normal or standard	49%	55%
Below normal	41%	37%

Table III shows that a greater per cent of the non-training pupils have normal or standard intelligence quotients, while the training group exceeds the non-training group in the per cent of pupils having more than average intelligence, and also a greater per cent having less than average intelligence quotients.

[1] In discussing the percentage of the pupils making certain scores on the intelligence test, more than 110 is considered above normal, from 90-110 standard or normal, and less than 90 is considered below normal.

TABLE IV

COMPARISON OF THE EDUCATIONAL QUOTIENTS OF THE TRAINING AND NON-TRAINING GROUPS.

	Training Group	Non-Training Group
Range	60	57
Mean	82.33±1.68	86.42±1.39
Median	90.57	87.80
Lower quartile	82.12	78.00
Upper quartile	101.31	95.50
Quartile deviation	9.59	8.75
Average deviation	13.29	9.84
Standard deviation	14.70	12.54

Table IV shows that the mean of the non-training group exceeds that of the training group 4.09 points, while the median of the latter group is 2.77 points greater than that of the non-training group.

The probable error of the difference of the means for the two groups is 2.18, but since the critical ratio[2] is less than three, this difference is of little significance. A close correlation is noted in the quartile deviations, but the average deviation, also the standard deviation, is greater in the training group.

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2 The critical ratio is the ratio of the difference between the means and the probable error of this difference. It is found by the following formula:

$$\frac{a^1-a^2}{\text{P.E.(difference)}}.$$

TABLE V

COMPARISON OF THE ACCOMPLISHMENTS IN TERMS OF THE EDUCATIONAL QUOTIENTS AND THE NORMS.

	Training Group	Non-Training Group
Above normal	12%	2%
Normal or standard	47%	46%
Below normal	41%	52%

Table V shows that the percentage of the training group above normal is 12 per cent and only 2 per cent for the non-training group. There is but a slight difference in the percentages of the normal groups, but a very noticeable difference, (11 per cent) in favor of the training group in the number of pupils who have educational quotients below the standard.

For comparison it is interesting to note the correlation of the educational quotients (what the pupils accomplish in school in terms of their chronological ages) and the accomplishment quotients (what the pupils accomplish in terms of their mental capacities).[3]

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[3] The accomplishment quotient is found by the following formula: $\frac{E.Q.}{I.Q.} = A.Q.$

TABLE VI

COMPARISON OF THE ACCOMPLISHMENT QUOTIENTS OF THE TWO GROUPS.

	Training Group	Non-Training Group
Range	57	70
Mean	102.94±1.20	98.02±1.28
Median	102.10	97.00
Lower quartile	93.62	88.60
Upper quartile	109.45	106.50
Quartile deviation	7.92	8.95
Average deviation	8.58	9.54
Standard deviation	11.43	12.72

Although Table VI shows that there is a much greater range in the accomplishment quotients of the non-training group, there is no appreciable difference in the other phases of the comparison. There is a probable error of the difference of the means of 1.75 in the two groups, which is of no great significance, since the critical ratio is less than three. The training group excels the non-training group in the central tendency and percentile measures, while there is greater variability in the non-training group. In measuring success, it is an indication of success if the scores are grouped closely around the mid-point, providing the mid-point be reasonably high.

TABLE VII

COMPARISON OF THE ACCOMPLISHMENTS QUOTIENTS OF THE TRAINING AND NON-TRAINING GROUPS IN TERMS OF THE NORM OR STANDARD.

	Training Group	Non-Training Group
Above standard	25%	9%
Standard or normal	73%	68%
Below standard	2%	23%

Table VII shows a high percentage of the training school pupils are accomplishing as much as or more than is expected in relation to their ability. The table further shows that only 2 per cent of the training group is doing inferior work, while the non-training group has a very high percentage of pupils who are not accomplishing as much as they should according to their mental ability.

CHAPTER IV

COMPARISON OF THE ACHIEVEMENT OF THE TRAINING AND NON-TRAINING GROUPS IN SUBJECT MATTER

In order to determine the effect of student teaching upon the achievement of the pupils in the training school, it is necessary to compare the training and non-training pupils from different points of view. Objective tests were administered to both groups of pupils at the same periods, and the results of the tests were tabulated and compared. This tabulation appears in the following tables.

TABLE VIII

COMPARISON OF THE SCORES RESULTING FROM THE LANGUAGE USAGE TEST.

	Training Group	Non-Training Group
Range	98	77
Mean	76.06±2.81	67.97±2.31
Median	81.25	77.50
Lower quartile	63.25	62,94
Upper quartile	95.35	84.75
Quartile deviation	16.05	10.90
Average deviation	19.23	17.01
Standard deviation	24.63	21.03

Table VIII shows a decided variation in the scores of the training and non-training groups. The greatest difference is in the range; however, the non-training group tends to fall more closely around the midpoint. There is a probable error of the difference in the means of 3.63, but this is of no great significance since the critical ratio is small.

Since the groups consist of pupils from grades four, five, six, and seven, it will be well to determine the percentage of the pupils in each group that made standard, above standard, and below standard scores for the grade. The following tables show this.

TABLE IX

COMPARISON OF THE ACHIEVEMENT IN LANGUAGE USAGE TEST IN TERMS OF THE STANDARD OR NORMS.[1]

	Training Group	Non-Training Group
Above standard	54.29%	45.94%
Standard for the grade	11.43%	10.82%
Below standard	34.28%	43.24%

Table IX shows that the training group has greater per cent more pupils who scored above the standard for the grade. No appreciable difference is noted in the per cent of pupils making the average or standard score, but the non-training group has 8.96 per cent more pupils whose scores fall below the standard.

A possible explanation for the difference in the scores is that the training group has more individual instruction, consequently more drill in language usage than the non-training group, since the student teachers are in position to correct or have corrected the grammatical errors made by the pupils in discussing the lesson.

[1] The average or standard score allows three points above and three points below the standard that is given on the achievement test.

TABLE X

COMPARISON OF THE SCORES MADE ON THE STANFORD LITERATURE TEST:FORM Z.

	Training Group	Non-Training Group
Range	70	80
Mean	66.10±1.81	56.25±1.84
Median	70.62	68.50
Lower quartile	57.12	59.25
Upper quartile	81.69	77.69
Quartile deviation	12.29	9.22
Average deviation	13.26	13.68
Standard deviation	16.44	16.59

Table X shows a close correlation between the literature scores for the training and non-training groups. The training group has a slightly higher median, but the quartiles tend to fall nearer the mid-point in the non-training group; therefore the quartile deviation of the training group is 3.09 points greater for the training group. There is a probable error difference of 2.58 in the means of the two groups, but since the critical ratio is very small, this is of no great significance.

TABLE XI

COMPARISON OF THE ACHIEVEMENT IN LITERATURE IN TERMS OF GRADE STANDARDS OR NORMS.

	Training Group	Non-Training Group
Above standard	31.44%	21.62%
Standard or normal	14.28%	18.92%
Below standard	54.28%	59.46%

Table XI shows a decided variation in the scores of the two groups. The training group exceeds the non-training group 9.82 per cent in the number of pupils making above standard scores; the training group has 4.64 per cent fewer standard scores than the other group, and also 5.18 per cent fewer pupils who made scores below the standard for the grade.

A possible explanation for this variation is the fact that the training group has access to more reading material, since both the city and college libraries are accessible to the pupils in the training school.

TABLE XII

COMPARISON OF THE SCORES OF THE TWO GROUPS ON THE SANGREN-WOODY READING TEST.

	Training Group			Non-Training Group		
	Word Meaning	Rate	Total Reading	Word Meaning	Rate	Total Reading
Range	21	26	67	23	30	81
Mean	22.48±.56	20.44±.62	71.95±2.38	20.35±.53	17.12±.84	63.22±2.07
Median	21.85	19.93	74.50	20.27	16.37	58.50
Q1	19.02	14.92	51.25	17.12	14.62	48.25
Q2	26.35	23.63	91.37	22.75	19.89	69.75
Q.D.	3.66	4.35	20.06	2.81	2.63	10.75
A.D.	4.08	4.44	18.42	3.45	2.82	14.40
S.D.	4.92	5.43	20.88	4.83	5.10	18.76

Table XII gives the data for two of the most important parts of the reading and the total score on the entire test.

There is a significant difference in the entire data given in favor of the training group, even though the range is fourteen points greater in the non-training group, due to the extremely low scores of a few individuals. The next greatest variabilities are in the median (16.00), upper quartile (21.62), and the quartile deviation (9.31). These variations may be due, also, to the fact that the training group has access to a larger number of books than the non-training group.

There is a probable error of the difference of .77 in the word meaning, 1.04 in the rate, and 3.15 in the total reading, but since the critical ratio is less than three, there is no significant difference.

TABLE XIII

COMPARISON OF THE SCORES ON THE STANFORD ARITHMETIC TEST:FORM V.

	Training Group			Non-Training Group		
	Reasoning	Computation	Arithmetic Average	Reasoning	Computation	Arithmetic Average
Range	69	63	61	41	69	53
Mean	74.5±1.6	82.2±1.9	79.0±1.6	75.6±1.2	81.2±2.0	78.6±1.5
Median	75.75	82.50	79.75	78.17	81.50	81.75
Q_1	68.67	67.75	69.67	68.75	65.25	69.19
Q_2	84.19	96.19	90.12	83.84	92.85	88.31
Q.D.	7.76	14.22	10.22	7.54	13.80	9.56
A.D.	10.59	14.55	12.21	8.64	15.27	11.28
S.D.	13.98	17.34	14.67	11.01	18.42	13.44

Table XIII shows a decided variation in the range of the scores of the training and non-training groups, but there is no significant difference in the data; therefore the achievement in arithmetic, reasoning and computation, is approximately the same for the two groups.

There are probable error differences in the means as follows: reasoning,2.01; computation,2.83; and total arithmetic average,2.19. The critical ratios are of no statistical significance since they fall below three.

In order to determine the actual achievement of the pupils in arithmetic, it is necessary to make a comparison of the scores with the grade standards. This comparison is given in Table XIV.

TABLE XIV

COMPARISON OF THE SCORES MADE ON THE ARITHMETIC TEST WITH THE GRADE STANDARDS.

	Training Group	Non-Training Group
Above standard	45.71%	56.76%
Standard for the grade	31.43%	27.03%
Below standard	22.86%	16.21%

Table XIV shows that 11.05 per cent more of the non-training pupils are above the standard for the grade, but the training group excels the non-training group in the percentage of pupils who made standard scores. The training group also has a greater per cent by 6.65 in the group below standard.

The only explanation that the writer can give to this variation is that the public-school teachers probably give more time to the study and drill in arithmetic than the training-school teachers. Since there are more activities, projects, and related subjects in the training school, the training teachers can give less time to particular subjects, in so far as drill is concerned.

TABLE XV

COMPARISON OF THE SPELLING SCORES OF THE TRAINING AND NON-TRAINING PUPILS.

	Training Group	Non-Training Group
Range	87	65
Mean	84.32±2.17	84.17±1.74
Median	91.10	87.50
Lower quartile	79.25	74.25
Upper quartile	97.55	95.75
Quartile deviation	9.15	10.75
Average deviation	13.92	12.00
Standard deviation	19.05	15.69

Table XV shows that the training school group has a much greater range than the non-training group, although the tendency of the quartile points to fall around the mid-point is in favor of the training-school group. The standard deviation is greater in the training group, due to the extremely low scores of two individuals. There is a probable error difference of 2.78 in the means, but since the critical ratio is small, this is of little significance.

TABLE XVI

COMPARISON OF THE SPELLING SCORES OF THE TRAINING AND NON-TRAINING GROUPS WITH THE STANDARD SCORES FOR THE GRADE.[3]

	Training Group	Non-Training Group
Above standard	28.57%	24.32%
Standard for the grade	11.43%	27.03%
Below standard	60.00%	48.65%

Table XVI shows a decided variation in the percentage of pupils making above standard scores, but the per cent of pupils making standard scores is greater for the non-training group by 15.60 per cent. The training group has a much greater per cent of pupils whose scores fall below the standard. The non-training group has a much larger per cent of pupils making standard and above than does the training group.

The only explanation which the writer can give for this variation is the same as given for the difference in the arithmetic scores.

[3] Since the standard score for the seventh grade on this test is 98, and the highest possible score is 100, the average or standard score will be considered as those falling on the standard, one above, and one below the standard.

TABLE XVII

COMPARISON OF THE ACTUAL ACHIEVEMENT OF THE TWO GROUPS AS SHOWN BY THE POINTS GAINED ON THE STANFORD ACHIEVEMENT TESTS IN TWELVE MONTHS.

	Training Group	Non-Training Group
Gained ten points or more	57.44%	50.00%
Gained from five to ten points	33.33%	32.14%
Gained fewer than ~~five~~ points	9.53%	17.86%

Table XVII shows the per cent of pupils who gained more than ten points, from five to ten points, and fewer than five points. The data for this table ~~was~~ Were procured from a set of Stanford Achievement tests, administered in January, 1931, and a set of Stanford Achievement tests (forms W and Z, respectively), administered in January, 1932.

The table shows that the training group excels the non-training group 7.44 per cent of those gaining ten points or more. As there is no appreciable difference in the number making a gain of from five to ten points but a great variation in the number of pupils who have not gained as many as five points during the twelve months, it is clearly seen that the training group has 8.33 per cent fewer pupils who have not gained than does the non-training group.

CHAPTER V

SUMMARY AND CONCLUSIONS

As a result of this study it was found that the pupils in both the training and non-training schools are of average age, intelligence, and educational standing according to the type of children and grades from which they were selected.

The pupils studied were of approximately of the same age, chronologically and mentally.

The average of the educational quotients for the training group is slightly higher than that of the non-training group; therefore the training group has a greater per cent of pupils who ranked above the standard in educational accomplishments.

There is a noticeable difference in favor of the training group in accomplishments; the training group has a total of 98 per cent of pupils scoring standard or above in the accomplishment-ratio table, and the non-training group has a total of only 77 per cent.

The comparison of the language scores of the training and non-training groups indicates superior progress by the former.

The scores of the literature test are considerably higher for the training group.

The only significant difference in the reading ability as shown by the test is in the total reading scores, which are much higher for the training group. The rate-of-reading scores are higher also for the training group.

The comparison of the arithmetic scores shows that the non-training pupils excel the training pupils in the percentage of

pupils who ranked standard or above on the arithmetic test.

The spelling ability of the non-training group is superior to that of the training group according to the criteria used in judging the two groups of pupils.

The comparison of the scores on the New Stanford Achievement Test shows that the training group made considerably more gain within the year than did the non-training group.

As a whole the tests showed that both groups of pupils do superior and inferior work in the various subjects. In this study there has been a very close correlation of the scores on all tests.

By this testing program it was found that the pupils do not lose in the training school.

From this study it may be concluded that the training-school teachers should give more time to arithmetic and spelling drill, and the non-training teachers should give more time to literature, language, and reading.

By carefully analyzing this study one can readily see that there is no attendant handicap to the training pupils; in fact the teaching profession has been greatly improved by the wide use of practice teaching for those who teach in our public schools.

The writer suggests a more extensive study of this type using data from many schools and sections to determine whether or not all training schools are doing work equal to that of the public schools.

BIBLIOGRAPHY

Anthony, Katherine M., "The Harrisonburg Program," Educational Administration and Supervision, Vol.17, (May, 1930), pp.356-357.

Bagley, W.C., "The Place of Applied Philosophy in Judging Student Teaching," Educational Administration and Supervision, Vol.17, (May, 1930), pp.330-335.

Bell, Dorothy M., "Some Thoughts from Critic Teaching," Classical Journal, Vol.27, (September, 1931), pp.109-118.

Cade, G.N. and Gray, W.S., "Objective Studies of the Achievement of the Training-School and Public-School Pupils," Elementary School Journal, Vol.19, (December, 1918), pp.291-293.

Canine, E.N., "Administration of Student Teaching in Indiana State Teachers College," Teachers College Journal, Vol.2, (September, 1930), pp.5-11.

Cook, W.A., "The Status of the Critic Teacher," Educational Administration and Supervision, Vol.14, (April, 1928), pp.247-256.

Davis, C.O., "Assuring Adequate Preparation of Student Teachers in Subject Matter," Educational Administration and Supervision, Vol.16, (May, 1930), pp.364-371.

Davis, C.O., "Preparing Student Teachers in Subject Matter," The Nation's Schools, Vol.6, (August, 1930), pp.21-24.

Dearborn, F.R., "A Tentative Plan for Integrating Theory and Practice," Teachers College Journal, Vol.21, (September, 1930), pp.17-26.

Elsea, A.F., "A Study of Student Teaching," Journal of Education, Vol.7, (May, 1930), pp.345-350.

Engleman, J.O., "The Place of Objective Standards in Judging Student Teaching," Educational Administration and Supervision, Vol.17, (May, 1930), pp.321-329.

Garrett, H.E., Statistics in Psychology and Education (New York, Longmans, Green, and Co., 1926), pp.118-148.

Heilman, J.D., "The Child's Loss Due to Student Teaching," School and Society, Vol.21, (March 7, 1925), pp.296-297.

Helseth, I.O., "Measuring Practice Teaching," Journal of Education, Vol.7, (April, 1926), pp.298-303.

Hines, L.N., "The Relationship Between General Administration and the Training School," Teachers College Journal, Vol.2, (September, 1930), pp.1-2.

Irwin, F.A., "Work of the Teachers College in the Preparation for Student Teaching," Educational Administration and Supervision, Vol.18, (March, 1932), pp.223-228.

Kelley, T.L., Statistical Method (New York, The Macmillan Co., 1923), pp.94-108.

Kyte, G.C., "Specific Requirements in the Two-Year Curriculum for Training Elementary-School Teachers in the Representative Teachers Colleges and Normal Schools," Educational Administration and Supervision, Vol.17, (September, 1931), pp.401-406.

Ludeman, W.W., "Do Pupils Lose under Practice Teachers?" Educational Administration and Supervision, Vol.14, (February, 1928), pp.101-104.

Macdonald, Marion E., Practical Statistics for Teachers (New York, The Macmillan Co., 1930), Chapters VI-X.

McConnell, R.E., "Evaluating Student Teaching," Educational Administration and Supervision, Vol.17, (September, 1931), pp.426-428.

Mead, A.R., Supervised Student Teaching (New York, Johnson Publishing Co., 1930), pp.110-141 and 467-512.

Mead, A.R., "Statistical Data Concerning Student Teaching in Ohio," Educational Research Bulletin, Vol.11, (February, 1932), pp.69-71.

Nulton, Lucy, "Analyzing and Criticising Student Teaching in the Early Elementary Grades," Peabody Journal of Education, Vol.6, (July, 1928), pp.15-23.

Orr, M.L., "Administration of the Training School and Student Teaching," Educational Administration and Supervision, Vol.16, (February, 1930), pp.147-151.

Ramsey, E.E., "The Value of Supervised Teaching," Teachers College Journal, Vol.2, (September, 1930), pp.3-4.

Root, Rosamond, "The Outcomes Of Supervised Student Teaching," Educational Administration and Supervision, Vol.12, (April, 1926), pp.251-259.

Sherrod, C.C., "The Training School," National Educational Association Journal, Vol.20, (January, 1931), pp.17-18.

Smith, W.V., "The Function and Value of a Demonstration School," Elementary School Journal, Vol.29, (December, 1928), pp.267-272.

Stansbury, V.E., "The High Cost of Ineffiency," School and Society, Vol.35, (January 30, 1932), pp.156-158.

Steele, Roxana A., "Supervision of Practice Teaching for the New School," Educational Method, Vol.11, (April, 1932), pp.419-424.

Strebel, R.F., "Evaluation of Student Teaching," Educational Administration and Supervision, Vol.17, (May, 1931), pp.336-340.

Strebel, R.F., "The Scholastic Status of Pupils Taught by Student Teachers," Educational Administration and Supervision, Vol.18, (February, 1932), pp.99-103.

Wade, N.A., "Distribution of the Student Teacher's Time in Conducting Recitations," Elementary School Journal, Vol.17, (December, 1931), pp.692-704.

Wells, F.L., "Supervised Teaching in Indiana State Teachers College," Teachers College Journal, Vol.2, (September, 1930), pp.12-15.

Whitney and Frasier, "The Relation of Intelligence to Student Teaching Success," Peabody Journal of Education, Vol.8, (July, 1930), pp.3-6.

Whitney, F.L., Methods in Educational Research (New York, D.Appleton and Co., 1931), pp.186-228.