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A COMPARISON OF THE ACADEMIC ACHIEVEMENT AND SOCIAL  
ADJUSTMENT OF MENTALLY RETARDED STUDENTS

by

C. Thomas Musgrave

A thesis submitted in partial fulfillment  
of the requirements for the degree

of

MASTER OF SCIENCE

in

Special Education

Approved:

UTAH STATE UNIVERSITY  
Logan, Utah

1965

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## DEFINITION OF TERMS

Because of the many terms used in the discussion of the mentally retarded it is important that the meanings be defined.

### Mental Retardation

"The term mental retardation, as hereafter used, incorporates all the meanings that have been ascribed historically to such concepts as feeblemindedness, idiocy, imbecility, and moronity."

(Rothstein, 1961, p. 16).

### Educable Mentally Retarded

The term educable mentally retarded will refer to students

...who have a mental age (evaluation based on results of individual, standardized psychological tests) of more than one-half but less than three-fourths of their chronological age, (approximately 55 to 75 I.Q.) but who appear to be capable of acquiring primary academic skills, social adequacy, and occupational competency. (State of Utah, legal provisions for educating the handicapped child, 1961, p. 8).

### E.M.R.

E.M.R. are the initials for Educable Mentally Retarded and has the same definition as above.

### Special Classes

Special classes are classes with not more than fifteen students,

with a special curriculum and a teacher trained in the education of children who are mentally retarded.

#### Regular Classes

Regular classes are classes with students of the same chronological age with a regular curriculum and a regularly trained teacher.

#### Social Adjustment

Social adjustment refers to the ability to interact satisfactorily in the social environment as measured by the Pintner Pupil Portraits Test and a teacher rating scale.

#### Experimental Group

An experimental group is the group of educable mentally retarded pupils who have had a minimum of five years of special education.

#### Control Group

A control group is the group of educable mentally retarded pupils who have had no special education.

#### Intelligence Quotient

An intelligence quotient is the verbal and abstract learning and problem solving ability as measured by the Stanford-Binet Intelligence Scale 1960 revision.

I.Q.

I.Q. are the initials for intelligence quotient and has the same definition as above.

Academic Achievement

Academic achievement refers to the grade level reached in reading, arithmetic, and language as measured by the California Achievement Test, junior high level, form X, 1957.

A BRIEF HISTORICAL REVIEW OF THE CARE OF  
THE MENTALLY RETARDED

Public awareness of the problem of mental retardation is relatively new. Professional services in this area are less than one hundred and fifty years old in America. In essence, the treatment of the mentally retarded since ancient times has been very harsh. The Spartans from ancient Greece left all defectives exposed to the elements to die. They were treated with aversion and subjected to many indignities.

During the middle ages a more tolerant attitude developed. They were known as "natural fools." Many of them were taken into homes of the well-to-do families where they became objects of amusement at social gatherings.

The attitude toward the retarded during the middle ages varied from two extremes. On one hand they were considered "infants of the good God." Homes in which such babies were born were believed to be divinely blessed. The other extreme denounced them as evil spirits and "possessed by the devil." During the thirteenth century the churches began to provide institutions for the more unfortunate members of society.

During the thirteenth century the first colony for the custodial care of the retarded was established in Belgium. These early institutions did not attempt education or treatment but only provided a sanctuary for those who could not survive in an uncompromising society.

The belief was that mental retardation was caused primarily by heredity, and therefore, there was no possible treatment or education. (Rothstein, 1961, Ch. I).

Probably the first and most important professional person to study mental retardation was Jean Itard. He discarded the naturalists' theory of heredity and turned to the writings of Locke and Rousseau which emphasized the idea that all learning came through the senses and if given the proper stimulation, everyone could develop the ability to learn. From about 1800 to 1805, Dr. Itard worked with a twelve year old boy who was captured in the forests of Aveyron and declared to be retarded. He taught him, emphasizing sense and motor training. Itard was able to produce pronounced changes in the boy's behavior, but he was unable to teach him to live in society. He was also unable to teach him to talk. Itard believed he had failed. Students in the field of mental retardation regard his efforts as the first major scientific attempt to train a mentally retarded child. This was the beginning of the movement in which professional men took the responsibility from the church for helping the mentally retarded. It was also the beginning of a change in the attitude of incurability and custodial care to one of treatment and education. (Rothstein, 1961, Ch.I).

Today the retarded are cared for in many ways. Among them are: private and public residential institutions, day care centers, sheltered workshops, camps and other community facilities.

#### Utah

In writing a review of the history of the care of mentally

retarded in Utah the writer will narrow the field to the care of the educable mentally retarded. The constitution of the State of Utah states that "the public schools shall be open to all children of the state." The mentally retarded, therefore, are equal under the law and should have an equal right in the provision of physical facilities for learning like other children. The major problem for schools is to provide programs necessary for the limited ability or capacity to learn of retarded students.

According to the state statutes the state is responsible for providing educational opportunities for the mentally retarded children. This responsibility has been delegated to the local school board in each school district. Under the same statutes the education of mentally retarded children is not mandatory but permissive. Children who cannot benefit from school can be released, but school districts which maintain special classes in the public schools can receive reimbursement from the State Board of Education. The school districts and the schools within each district handle the problem of education of the mentally retarded in one of three ways: special classes, integration in regular classes, or release from school. Utah's first move toward public education in special classes of the mentally retarded in public school did not occur until 1953. In that year the Utah State Legislature passed the necessary financial measures. The first special classes were started in the school year 1952-1953 with five classes in the state. The number of special classes has increased steadily, today there are one hundred and seventy-five classes for mentally retarded children in the state.



Weber County School District

Weber County School District did not begin to give special attention to the mentally retarded children until 1956-1957 when two classes for the mentally retarded children were opened in the elementary grades. There are now sixteen special classes in Weber County; three on the high school level, three on the junior high school level and ten on the elementary level.

## REVIEW OF LITERATURE

Previous research on the value of special education classes is relevant to the present study because of the results and the method of the studies.

Ellenbogen (1957) conducted a study of mentally handicapped children in regular and special classes of the Chicago Elementary Public Schools in 1956. The special classes had a small number of students, a special curriculum for the mentally retarded students, and specially trained teachers. The children had been in special classes for two years. The children in the regular classes had followed a regular academic program. The groups were matched on school district, I.Q., sex, and age. Academic achievement in reading and arithmetic was measured by the Stanford Achievement tests. The teachers in the classrooms evaluated the pupils on school adjustment by means of ratings given during personal interviews. The pupils were interviewed on vocational aspirations, social adjustment, and attitude toward school.

It was discovered that the children in the regular classes had a significantly higher mean score over children in the special classes in arithmetic computation, arithmetic reasoning, and word and paragraph meaning. The children in the special classes were found to have a significantly higher teacher rating of school adjustment, more realistic vocational aspirations, and more after-school jobs. The attitudes toward school were almost the same in both groups. The

differences were attributed to the effects of the different class placement.

This writer questions if two years' attendance in special classes is enough time to produce meaningful differences in the two groups of students. One reason for the higher mean scores of the subjects in the regular classes in the above mentioned areas and the higher rating of the subjects in the special classes in social adjustment may be attributed to the different emphasis in the two curricula. If we are able to achieve better social adjustment in special classes and are not able to produce similar results in academic achievement perhaps we need to take a closer look at our special academic curriculum for the retarded students.

Johnson (1950) carried out a study to determine the social position of retarded children in regular grades. He examined classes to determine if the mentally retarded children in the regular classes were accepted, isolated, or rejected and to what degree were they accepted, isolated, or rejected. To do this he compared the social position of mentally retarded children with that of normal children. These comparisons were made in 25 regular classes at 5 different grade levels. There were five classes of each of the first five grades. All subjects were given group achievement and intelligence tests, individual intelligence tests, a social maturity rating was obtained, and a sociometric questionnaire was used. The major finding of this study was that the mentally retarded children were isolated and rejected in the regular classes. This indicates the mentally retarded are segregated socially and in numerous cases even physically.

Johnson and Kirk (1950) carried out a similar study and found basically that the same condition existed as those in the Johnson study.

Balwin (1958) made a study of the social position of the educable mentally retarded child in the public schools. She found that the mentally retarded children who were tested were less accepted socially by their classmates than were the non-mentally retarded children in the grades. She states that she was impressed by the fact that the anti-social behavior of the mentally retarded children seemed to be the cause of resentment by both the teachers and the normal pupils.

Mullen and Itken (1961) state that there was no consistent difference in academic progress between the educable mentally retarded student in the special and regular classes. The special classes were more successful in reducing the hostility level of the students, especially of the boys, and the regular classes were more successful in increasing the pupils range of ideas. The children in the special classes showed greater progress in developing secure, confident, and friendly relations with their classmates.

Blatt (1958) conducted a study on mentally retarded elementary school children in Blair and Clearfield Counties, Pennsylvania, comparing 75 special-class children with 50 pupils in regular classes. The two groups were equated on age, sex, and I.Q. The total of 125 students came from 19 different schools and 95 different classrooms. No significant differences were found between the two groups on scores on the California Test of Personality for Personal and Social Adjustment, delinquency, behavior records, number of hobbies, and interests, or scores on the California Achievement tests for reading,

arithmetic, and language achievement.

The study points out that mentally retarded students in the special classes were more socially mature and emotionally stable than the subjects in the regular classes. These findings, however, were based on results from scales which have no established reliability or validity. The teachers who rated the students on the scale could very well have been biased. In this study as well as the one by Johnson the special class students had completed only two years of special class instruction.

Pertsch (1936) made a study and attempted to compare the progress in subject achievement, character development, and mechanical skill of two groups of mentally retarded students in New York City. One of the groups had been in special classes for the mentally retarded. The second group was found by selecting individuals from regular grades who were comparable according to age, I.Q., and social-economic status. Pertsch found that the general academic achievement of the non-segregated group was somewhat superior to that of the equivalent segregated groups, but the non-segregated boys made greater gains in mechanical ability and in personality traits than did the non-segregated groups.

Cowen (1938) questions the findings of Pertsch's study because of his method of matching students. The students were all taken from the same community and no reason was given why some retarded children were placed in special classes while others were not. The students who could best survive in a regular class were probably placed there and those who were having the most difficulty were placed in the special classes. There was also a five month time lapse between the initial

and the final testing and the scales were designed for students with an average rate of learning. Cowen sums up, "although this piece of work was satisfactory for the purposes of obtaining the degree of doctor of philosophy, it is not satisfactory as evidence for or against special classes."

In the studies cited there appears to be very little difference between the two groups in academic achievement but usually a difference in social adjustment. In the opinion of this writer the subjects were not in special classes long enough to produce a significant difference.

## STATEMENT OF PROBLEM AND HYPOTHESIS

The purpose of this study was to compare the academic achievement and social adjustment of mentally retarded students who have had five years of special education with mentally retarded students who have had no special education. This comparison was made to determine if there is a significant difference between the two groups.

The present study was not undertaken to defend or attack special education classes. The study was designed to determine to what extent academic and social differences existed between the two groups. It is hoped the results of this study can be used in planning programs for the educable mentally retarded children in the Weber County Schools.

The writer proposes the following hypotheses:

1. There will be no significant difference between the two groups in reading.
2. There will be no significant difference between the two groups in arithmetic.
3. There will be no significant difference between the two groups in language.
4. There will be no significant difference between the two groups in attitude toward school.
5. There will be no significant difference between the two groups as evaluated by their teachers.

Data concerning these problems were collected from standardized

tests from teacher-appraised school adjustment rating scale, and from school records.



## METHODS AND PROCEDURES

The study was performed in the secondary schools of Weber County, in the State of Utah, in 1964-1965. The two groups were matched in chronological age, sex, and intelligence quotient.

The range in chronological age was 12 through 18. The intelligence quotient range was 55 to 80.

Sex was equated in order to eliminate any possibility that sex differences could cause a difference in academic achievement or social adjustment.

Table 1 gives the ages, birth dates, sex, and I.Q. of the subjects.

Academic achievement was measured in reading, arithmetic, and language by means of the California Achievement Tests.

Social adjustment was measured by the Pinter Pupil Portrait Test and School Adjustment Rating Scale.

### Tests Used

The Stanford-Binet Intelligence Scale was used to determine the intelligence quotient. The reliability coefficients reported for ages 14-18 range from .95 to .98 for I.Q.'s from 60-149. Terman and Merrill (1960) indicate that the scale is more reliable for older than for younger children and more reliable for lower than for higher I.Q.'s. These conditions fit the needs of this study very well.

Table 1. Birth dates, ages, sex, and I.Q. of the subjects

Subject	Birthdate	Age	Sex	I.Q.
A	12-12-47	18-1	F	70
a	3-24-47	17-10	F	68
B	2-15-47	17-11	M	66
b	9-15-46	18-4	M	72
C	3-12-47	17-10	M	70
c	7-23-47	17-6	M	70
D	10- 2-46	17-3	M	80
d	6-14-47	17-7	M	80
E	1-13-48	17	M	75
e	5- 5-48	16-8	M	76
F	2-27-48	16-11	M	74
f	11- 3-47	17-2	M	73
G	4- 4-48	16-9	M	61
g	9- 9-48	16-4	M	61
H	9-13-48	16-4	F	67
h	5- 2-48	16-8	F	68
I	9- 2-48	16-4	M	64
i	8- 3-48	16-5	M	64
J	1-19-51	14-1	M	75
j	1-30-51	14-1	M	78
K	12-30-50	14	M	64
k	3-26-51	13-10	M	65
L	3-16-52	12-10	M	75
l	8-31-51	13-5	M	79
M	10-13-49	15-3	M	66
m	8- 2-49	15-5	M	78
N	5-27-50	14-8	M	74
n	12- 2-49	15-1	M	76
O	6-23-50	14-7	M	79
o	8-22-50	14-5	M	80
P	7-27-50	14-6	M	58
p	4-18-51	13-9	M	66
Q	11-13-50	14-2	M	73
q	3- 1-50	14-10	M	76

The California Achievement Test, Junior High level, Form X, was used to measure academic achievement in reading, arithmetic and language. The reliability coefficients are reported as reading .95, arithmetic .94, and language .93. Validity coefficients are not reported in the manual. Neidt (1959) reports that the "correlation between scores on the new edition and other standardized achievement tests scores reflect a high degree of construct validity." (Mental measurement yearbook, Fifth edition, p. 8).

The Pintner Pupil Portraits was administered to every subject as a measurement of his social adjustment. This test consists of 100 items and has two forms. The questions contain both positive and negative statements and were read aloud to the subjects. The subjects were required to circle a "yes" if they felt the same about the item as the reader did or circle a "no" if they felt differently. The items are grouped into five sub-tests dealing with the relationship of the pupil to his school, to his teacher, to his classmates, to himself, and to his home and family.

The reliability coefficient is based on the correlation between the two forms and is reported as .935.

The validity was established by giving the test which originally contained 287 questions to a group of "problem" children in a probation school and a group of students who were judged by their teachers to be "well adjusted." A critical ratio was established for each question in order to determine the questions discriminative ability. Only the questions which differentiated between the two groups were included in the final two forms. This writer selected the items from both forms

with the highest critical ratio and combined them into one test. A copy of the test used is found in Appendix A.

The school adjustment rating scale used was given to the writer by Mr. Reed Durham, a visiting professor at Utah State University from New Jersey. This school adjustment rating scale was used to determine the subjects' adjustment in nine areas as observed by their teachers. The areas are: work habits, self direction, emotional control, social adjustment, learning ability, liked by classmates, attention, confidence and persistence, and resistance to learning. This is a subjective scale and there is no data concerning reliability or validity. In order to eliminate some rather bias opinions two teachers rated each subject. The teachers selected as raters were teachers who taught academic subjects and were not special education teachers.

The special education students had several classes in the regular classes. The teachers who taught these classes were used as raters. In some cases it was necessary to use shop teachers as raters, and in other cases it was necessary to use special education teachers. The special education teachers used as raters had had experience as regular teachers and were instructed to rate the students in relationship to all students.

#### Group Comparisons

Results indicate the mean chronological age for the experimental group was 15 years, 10 months or 190 months and for the control group 15 years, 10 months or 191 months. The range of the chronological age for the experimental groups was 12 years, 10 months or 154 months

to 18 years, 1 month or 217 months and for the control group 13 years, 5 months or 161 months to 18 years, 4 months or 220 months.

Table 2 gives the ages of the subjects, the mean age, standard deviation, standard error of the mean, and the range of the two groups.

An inspection of Table 2 indicates that the difference between the two groups is less than one month. The standard deviations and standard error of the means are also very closely matched.

Results of the I.Q. test show the experimental group to have a mean I.Q. of 70 and the control group to have a mean I.Q. of 72. The range of I.Q.'s for the experimental group was 58 to 80 and the range for the control group was 61 to 80.

Table 3 gives the I.Q.'s, the standard deviation, standard error of the mean, and the range of the two groups.

Table 2. Ages of the two groups of subjects

Experimental Group		Control Group	
A	18-1	a	17-10
B	17-11	b	18-4
C	17-10	c	17-6
D	17-3	d	17-3
E	17	e	16-8
F	16-11	f	17-2
G	16-9	g	16-4
H	16-4	h	16-8
I	16-4	i	16-5
J	14-1	j	14-1
K	14	k	13-10
L	12-10	l	13-5
M	15-3	m	15-5
N	14-8	n	15-1
O	14-7	o	14-5
P	14-6	p	13-9
Q	14-2	q	14-10
Mean	190 months		191 months
S.D.	19.57		19.36
S.E. <sub>m</sub>	4.75		4.70
Range	154-217 months		161-220 months

Table 3. I.Q.s of the two groups of subjects

Experimental Group		Control Group	
A	70	a	68
B	66	b	72
C	70	c	70
D	80	d	80
E	75	e	76
F	74	f	73
G	61	g	61
H	67	h	68
I	64	i	64
J	75	j	78
K	64	k	65
L	75	l	79
M	66	m	78
N	74	n	76
O	79	o	80
P	58	p	66
Q	73	q	76
Mean	70		72
S.D.	6.30		6.14
S.E. <sub>m</sub>	1.53		1.49
Range	58-80		61-80

## RESULTS

### Academic Achievement

One of the goals of special education is academic achievement at mental age level. Achievement in reading, arithmetic, and language was measured to determine if there is a significant difference in the achievement of the two groups.

Tests were given to all subjects in January, 1965. There was less than a 30 days lapse between the date the first subjects were tested and the date the last subjects were tested. The writer believes this eliminates any possible difference a time interval might have on results.

The results of the California Reading Achievement Test indicates a difference between the means of .8 of a grade in favor of the control group and is significant at the .05 level of significance. Table 4 indicates the scores in grade level, the means, the S.D.'s, the S.E.<sub>m</sub>, the S.E.<sub>d</sub>, the t ratio, the t ratio needed at the .05 level, and the range.

Table 4. Results of the California Reading Achievement Test

Group	Mean	Range	S.D.	S.E. <sub>m</sub>	S.E. <sub>d</sub>	t ratio	t ratio needed
Experi- mental	5.3	3.8-6.6	.70				
Control	6.1	4.4-8.1	1.02	.25	.27	2.86	2.12



The results of the California Arithmetic Achievement Test shows a mean difference of .4 of a grade in favor of the control group. This difference cannot be considered statistically significant at the .05 level of significance. Table 5 indicates the scores in grade level, means, S.D., S.E.<sub>m</sub>, S.E.<sub>d</sub>, t ratio, t ratio needed at the .05 level of significance, and the range.

Table 5. Results of the California Arithmetic Achievement Test

Group	Mean	Range	S.D.	S.E. <sub>m</sub>	S.E. <sub>d</sub>	t ratio	t ratio needed
Experi- mental	5.5	4.3-8.2	1.08	.26			
Control	5.9	4.0-7.7	1.10	.27	.36	1.10	2.12

The California Language Achievement Test resulted in a mean difference of .9 of a grade in favor of the control group. This difference can be considered statistically significant at the .05 level of significance. Table 6 gives the scores in grade level, the means, S.D., S.E.<sub>m</sub>, S.E.<sub>d</sub>, t ratio, t ratio needed at the .05 level and the range.

Table 6. Results of the California Language Achievement Test

Group	Mean	Range	S.D.=	S.E. <sub>m</sub>	S.E. <sub>d</sub>	t ratio	t ratio needed
Experi- mental	5.2	3.7-7.2	1.08	.26			
Control	6.1	4.5-7.9	1.07	.26	.36	2.50	2.12

Social Adjustment Test

The Pintner Pupil Portraits Test was administered to all subjects in March, 1965. The test produces results in five areas of adjustment; pupil-school environment, pupil-teacher environment, pupil-pupil environment, pupil-self environment, and pupil-parent environment. The results are reported in each of those areas.

The results of the pupil-school environment indicate a mean difference of 1.2 in favor of the experimental group. This difference cannot be considered statistically significant at the .05 level of significance. Table 7 provides means, S.D., S.E.<sub>m</sub>, S.E.<sub>d</sub>, t ratio, t ratio needed at the .05 level, and the range.

Table 7. Pupil-school environment adjustment test

Group	Mean	Range	S.D.	S.E. <sub>m</sub>	S.E. <sub>d</sub>	t ratio	t ratio needed
Experi- mental	15.5	9-19	2.96	.72	1.06	1.20	2.14
Control	14.3	6-20	4.22	1.02			

The results of the pupil-teacher test indicates a mean difference of 2.5 in favor of the experimental group. Table 8 reports the mean, S.D., S.E.<sub>m</sub>, S.E.<sub>d</sub>, t ratio, t ratio needed at the .05 level and range.

An inspection of Table 8 indicates that a difference between the means of 2.5 is statistically significant at the .05 level of significance.

Table 8. Pupil-teacher adjustment test

Group	Mean	Range	S.D.	S.E. <sub>m</sub>	S.E. <sub>d</sub>	t ratio	t ratio needed
Experi- mental	14.4	7-20	3.71	.90	1.05	2.38	2.12
Control	11.9	6-19	4.15	1.01			

The results of the pupil-pupil test point out the fact that there is a mean difference of 1.6 in favor of the experimental group. Table 9 reports the means, S.D., S.E.<sub>m</sub>, S.E.<sub>d</sub>, t ratio, t ratio needed at the .05 level and the range.

Table 9. Pupil-pupil adjustment test

Group	Mean	Range	S.D.	S.E. <sub>m</sub>	S.E. <sub>d</sub>	t ratio	t ratio needed
Experi- mental	13.7	8-18	3.02	.74	.80	2.00	2.12
Control	12.1	8-17	2.59	.63			

An inspection of Table 9 indicates that the mean difference of 1.6 is not statistically significant at the .05 level of significance.

The results of the pupil-self test indicates that there is a mean difference between the two groups of 1.3 in favor of the experimental group. Table 10 reports the means, S.D., S.E.<sub>m</sub>, S.E.<sub>d</sub>, t ratio, t ratio needed at the .05 level of significance, and the range.

Table 10. Pupil-self adjustment test

Group	Mean	Range	S.D.	S.E. <sub>m</sub>	S.E. <sub>d</sub>	t ratio	t ratio needed
Experimental	14.2	10-18	3.45	.84	.99	1.31	2.12
Control	12.9	8-18	3.28	.80			

An inspection of Table 10 indicates that the mean difference of 1.6 results in a t ratio of 1.31 and is not statistically significant at the .05 level of significance.

The results of the pupil-parent test indicate a mean difference between the two groups of 2.0 in favor of the experimental group. Table 11 gives the S.D., S.E.<sub>m</sub>, S.E.<sub>d</sub>, t ratio, t ratio needed and the range.

Table 11. Pupil-parent adjustment test

Group	Mean	Range	S.D.	S.E. <sub>m</sub>	S.E. <sub>d</sub>	t ratio	t ratio needed
Experimental	15.9	6-20	3.48	.84	.97	2.06	2.12
Control	13.9	7-19	3.67	.89			

An inspection of Table 11 indicates that the mean difference between the two groups is 2.0 which results in a t ratio of 2.06 and lacks .06 of being statistically significant at the .05 level.

### Teacher Ratings

The teacher rating scale was given to determine if there was a significant difference between the two groups as viewed by the teacher. Of the nine areas rated, the experimental group was rated better than the control group in seven areas. These areas are work habits, self direction, social adjustment, learning ability, and confidence and persistence. In the areas of emotional control and how well the student is liked the difference was very slight. In the areas of attention and resistance to learning there was no difference between the two groups.

It should be noted that the control group was not rated above the experimental group in any area. It should also be noted that the difference between the two groups was statistically significant in only one area, that of work habits. In all areas the experimental group received 10 superior ratings and 60 inadequate ratings. The control group received 14 superior ratings and 86 inadequate ratings.

Table 12 gives the number of ratings in each area, the P.'s obtained and the P.'s needed to be significant at the .05 level of significance.

Table 12. Results of the teacher rating scale

Area	Group	Ratings				
		5	4	3	2	1
Work Habits	Experimental	0	10	5	14	5
	Control	0	11	6	5	12
P. 16.28		P. needed 7.81				
Self Direction	Experimental	1	3	13	12	5
	Control	2	4	6	11	11
P. 5.26		P. needed 7.81				
Emotional Control	Experimental	1	15	10	5	3
	Control	1	14	11	5	3
P. .08		P. needed 7.81				
Social Adjustment	Experimental	5	14	5	4	6
	Control	7	8	5	6	8
P. 2.66		P. needed 9.41				
Learning Ability	Experimental	0	7	10	12	5
	Control	0	3	12	13	6
P. 1.92		P. needed 7.81				
How Well Liked	Experimental	0	5	15	11	3
	Control	0	0	19	13	2
P. .06		P. needed 3.84				
Attention	Experimental	3	1	13	10	7
	Control	3	1	13	10	7
P. .00		P. needed 7.81				
Confidence and Persistence	Experimental	0	12	13	7	2
	Control	1	7	9	15	2
P. 3.98		P. needed 5.99				
Resistance to Learning	Experimental	0	11	11	11	1
	Control	0	11	11	11	1
P. .00		P. needed 5.99				

## DISCUSSION

The results of the present study indicate that there is a difference in academic achievement and social adjustment between the mentally retarded students in regular classes and the mentally retarded students who have received five years of special class instruction in Weber County. This writer believes that many variables could have effected the presence of this difference.

There is a lack of trained teachers in special education in the school system and because of this lack it is necessary to select and reject students diagnosed as mentally retarded on the basis of availability of special classes. This writer believes that under these conditions the students who are experiencing the greatest difficulties will be placed in the special classes, and that those who are experiencing reasonable success, will remain in the regular class.

In the area of reading and language the control group achieved significantly higher than the experimental group. This difference could be attributed to a difference in emphasis of goals in the regular class and in the special class. In the regular class the teachers are concerned primarily with the students' acquisition of the subject matter. The teacher in the regular class is supplied with a state study guide in which the goals are specifically stated, with a supply of prepared materials, with adequate teacher supervision.

The statistically insignificant difference in arithmetic achievement

could be the result of a small amount of difference in emphasis in the two types of classes in teaching arithmetic. Materials for teaching arithmetic in the regular class can be used in the special class.

The difference between the two groups in social adjustment was in favor of the experimental groups in every area, although not always significant. This difference might be attributed to the difference in emphasis on educational goals of classes. The special education teacher spends much of the class time in an attempt to teach the student how to adapt in society. The teacher in the regular class usually emphasizes the study of subject matter.

The differences between the two groups in this study could be caused by two other reasons:

1. Different emphasis on what was taught in the two groups.
2. Differences in the abilities of the teachers of the two groups.



## SUMMARY AND CONCLUSIONS

The results of this study necessitates the rejection of the null hypotheses in the comparison of the two groups.

1. The two groups did differ significantly in reading. This difference was in favor of the control group.
2. The two groups did not differ significantly in arithmetic.
3. The two groups did differ significantly in language. This difference was in favor of the control group.
4. The two groups differed significantly in pupil-teacher relationships.
5. The two groups did not differ significantly in pupil-school environment, pupil-pupil adjustment, pupil-self adjustment, and pupil-parent adjustment.
6. The two groups differed significantly in work habits as judged by their teachers.
7. The two groups did not differ significantly in self-direction, emotional control, school adjustment, learning ability, how well liked by other students, attention, confidence and persistence, or resistance to learning as judged by their teachers.

### Conclusions

The findings of this study indicate that the mentally retarded children in special classes in Weber County do not achieve as well

academically as the mentally retarded children in regular classes. The study shows that they do differ in social adjustment although this difference is not statistically significant. It is difficult to attribute the differences in the two groups to any one variable. The writer believes there are several weaknesses in the special education program in Weber County that if corrected would benefit the children in the special education classes.

### Recommendations

The writer stated in the statement of the problem that he hoped the results of this study could be used in planning programs for the mentally retarded students.

On the basis of the findings of this study the writer makes several recommendations for the purpose of improving the progress of students in special education classes in Weber County.

1. That the district create a special education curriculum committee.
2. That this committee be charged with establishing general goals for special education.
3. That the curriculum committee be charged with establishing specific goals for each level in each area:

Language

Reading

Writing

Speaking

Arithmetic

Social interaction

Health and safety

Occupational information

4. That the curriculum committee develop a cumulative record for each student showing his progress in each area. That the record follow the students through his school career.
5. That the district give more supervision to the teachers of special education.
6. That the above recommendation be put into effect on a state basis.

This writer maintains that with definite goals, specially trained teachers, supervision, small classes, adequate facilities, the attainment of the goals of special education can be more effectively and efficiently attained in the special education class. This assumption, however, should be tested in another research project with the same basic design.

#### LITERATURE CITED

- Baldwin, W. K. 1958. Social Position of the Educable Mentally Retarded Child in the Regular Grades in the Public Schools. *Exceptional Children* 25:106-108.
- Blatt, Burton, 1958. The Physical Personality, and Academic Status of Children Who Are Mentally Retarded Attending Special Classes as Compared With Children Who Are Retarded Attending Regular Classes. *American Journal of Mental Deficiency* 62:810-818.
- Buros, O.K., ed. 1959. *The Fifth Mental Measurement Yearbook*. 1959. Gryphon Press, New Jersey, 1292 p.
- Cowen, P. A. 1938. Special Class Vs. Grade Groups for Sub-normal Pupils. *School and Society* 48:27-28.
- Ellenbogen, Morton L. 1957. A Comparative Study of Some Aspects of Academic and Social Adjustment of Two Groups of Mentally Retarded Children in Special Classes and in Regular Grades. Doctoral Dissertation, Northwest University. (Original not seen; abstracted in *Dissertation Abstracts* 1957, Vol. 17, No. 2109-3154)
- Johnson, G. O. 1950. A Study of the Social Position of Mentally Retarded Children in the Regular Grades. *American Journal of Mental Deficiency* 55:60-89.
- Johnson, G. O., and S. A. Kirk. 1950. Are Mentally Handicapped Children Segregated in the Regular Grades? *Journal of Exceptional Children* p. 65-68, 87-88.
- Mullen, F. A., and W. Itken. 1961. Value of Special Classes for the Mentally Handicapped. *Education Digest* 27:46-49.
- Pertsch, F. Frederick. 1936. A Comparative Study of the Progress of Sub-normal Pupils in the Grades and in Special Classes. Doctor's Dissertation, Columbia University. (Original not seen; discussed in *School and Society* 48:28)
- Rothstein, Jerome H., ed. 1961. *Mental Retardation, Readings and Resources*. 1961. Holt, Rinehart and Winston, New York 425 p.
- Terman, L. M., and M. A. Merrill. *Stanford-Binet Intelligence Scale*. 1960. Houghton Mifflin Co., Boston 363 p.

APPENDIX A

Pintner Pupil Portrait Test

This is a test to see how well you like school. There are no right or wrong answers. I would like you to pretend that I'm a student and I am going to tell you what I like and dislike about school. If you feel the same as I do circle the yes on your paper. If you do not feel the same as I do circle the no on your paper.

1. I think school helps me.
2. I think I can be happy in school.
3. I do not like to go to assemblies.
4. I would rather go to work than to school.
5. I like to draw pictures during the lesson.
6. I think the work in class is interesting.
7. I do not like to be called on even when I know the right answer.
8. I wish I were older so I wouldn't have to go to school.
9. I think it is "allright" to chew gum or eat candy in class.
10. I don't think I can get through school without studying.
11. I think examinations are fair.
12. I don't think students miss much if they miss school.
13. I think everybody copies so why shouldn't I.
14. I think that school is a prison.
15. I sometimes make believe I'm sick so I won't have to go to school.
16. I think only "sissies" obey the school rules.
17. I think good marks are a matter of good luck.
18. I think there are too many rules in school.
19. I don't think good marks mean a lot.
20. I hate school.
21. I think my teacher understands me.
22. I think my teachers are too strict.
23. I like to ask my teacher about things I do not know.
24. I think the teacher makes the work interesting.
25. I like all my teachers.
26. I think my teachers grade fairly.
27. I think the teacher gives the good grades to the ones he likes.
28. I never talk back to my teachers.
29. I think the teachers are always watching me.
30. Sometimes I say things about my teachers that are not true.
31. I am often punished for things I didn't do.
32. I feel the teachers want to help me.
33. I never talk while the teacher is talking.
34. The teacher is my friend.
35. I like to do things for the teacher.
36. I think I would do better if I had a different teacher.

37. I think the teachers like the girls better than the boys.
38. I think the teachers all have "pets."
39. I think the teacher picks on me.
40. I am glad when my teacher is absent.
41. I do not like to be a leader in class.
42. I like to be by myself.
43. I am considerate of others.
44. I never blame others for what I have done.
45. I think it is fun to tease.
46. I think other students like me.
47. I make friends easily.
48. I don't think boys and girls should be in the same class.
49. I don't like to meet new students.
50. I think I do more for my friends than they do for me.
51. I would rather work with others than alone.
52. I think it's a waste of time to help slow students.
53. I don't think my friends care much for me.
54. I like to help others.
55. I think my friends are smarter than I am.
56. I am often left out of things.
57. My classmates like to tease me.
58. I think it's fun to go to a party.
59. I like to sit by myself away from others.
60. I wish I had more friends.
61. I think I know myself very well.
62. I don't like to work.
63. I think I'm unlucky.
64. I can not make myself do the right thing.
65. I think I'm a good sport.
66. I am always doing things the wrong way.
67. I am very happy.
68. I'm never sure of myself.
69. I do not lose interest in my work.
70. I like to day dream.
71. I wish I were someone else.
72. I don't think I'm missed when I'm absent.
73. I always know what to do next.
74. I worry a lot about school.
75. I think I'm doing my best in school.
76. I always try to do my best.
77. I think it pays to be good.
78. I think I can be trusted.
79. I can not study.
80. I dress nicely and look neat.
81. I wish I were a baby again.
82. I'm very happy at home.
83. I like to visit my relatives.
84. I don't get along well at home.
85. I like to invite my friends to my home.
86. I think my parents like me as well as my brothers and sisters.
87. I think I'm doing as well in school as my parents expect.
88. Sometimes I think I'm not wanted at home.

89. I'm not ashamed of my parents.
90. I think I understand my parents.
91. I wish I could get away from home.
92. I do not like to show my report card to my parents.
93. I like to buy presents for my parents.
94. I think I get a fair deal at home.
95. I like to ask my parents for advise.
96. I think my parents understand me.
97. I usually get my own way.
98. I like to work and help my family.
99. I never say things to hurt my parents.
100. I'm afraid of my parents.



APPENDIX B

School Adjustment Rating Scale

For each of the traits listed below, recall typical instances of student's behavior indicative of the trait, and then make your rating on this student by comparing him with the typical behavior of his classmates. Indicate your rating by putting a (x) cross in the one appropriate parenthesis for each trait.

I. Work Habits

- ( ) 1. Pupil works carefully, thoughtfully, and independently. He uses his initiative and is very resourceful. His work habits are of the very best.
- ( ) 2. The pupils work habits enable him to achieve all that would usually be expected of one of his ability.
- ( ) 3. The pupil does only what is required of him. Uses little initiative. Habits developed are not adequate but show some improvement and promise of becoming so.
- ( ) 4. The student has work habits that are adequate only for simple situations. Limited by lack of development of some elements that make for efficiency in attacking problems.
- ( ) 5. The pupil is careless and negligent. Has not developed such work habits that will enable him to do what he is capable of doing.

II. Self Direction

- ( ) 1. The student not only carries through whatever is undertaken, but also shows versatility and initiative in enlarging upon undertakings.
- ( ) 2. The student completes without external compulsion whatever is assigned, but unlikely to enlarge on assignment.
- ( ) 3. The student usually carries through undertakings, requiring only occasional reminder or compulsion.
- ( ) 4. The pupil can be relied on to complete undertakings only when they are of moderate difficulty and then only with much prodding and supervision.

- ( ) 5. The pupil cannot be relied upon to complete any undertaking even when constantly prodded and guided.

### III. Emotional Control

- ( ) 1. Has unusual balance of responsiveness and control.
- ( ) 2. Well balanced, shows self-control, in touch with realities.
- ( ) 3. Tends to be overemotional.
- ( ) 4. Emotional reactions get in his way; moody.
- ( ) 5. Easily upset emotionally; tantrums; outbursts of tears.

### IV. Social Adjustment

- ( ) 1. Can work with others and sometimes affects the opinions, ideas, and activities of associates.
- ( ) 2. Cooperates moderately.
- ( ) 3. Can not work with others.
- ( ) 4. Obstructive to others in group.
- ( ) 5. A timid non-participant, withdraws and remains alone.

### V. Learning Ability

- ( ) 1. Succeeds beyond the average pupil in most learning requirements for his grade.
- ( ) 2. Average in school achievement.
- ( ) 3. A slow, plodding learner.
- ( ) 4. Able to grasp only the most simple and concrete concepts.
- ( ) 5. Too immature to learn to read or to succeed in any "academic" learning activity at his grade level.

## VI. How Well Liked

- ( ) 1. His company and leadership is sought by most children.
- ( ) 2. Well-liked by most children.
- ( ) 3. Liked as much as the average child.
- ( ) 4. Tolerated.
- ( ) 5. Disliked by most of his classmates.

## VII. Attention

- ( ) 1. Is interested and absorbed in what he does
- ( ) 2. Able to hold attention to learning activities for longer periods than most children.
- ( ) 3. Attends adequately.
- ( ) 4. Difficult to keep at a task until completed.
- ( ) 5. Distracted; jumps rapidly from one thing to another.

## VIII. Confidence and Persistence

- ( ) 1. Does not give up; if one approach is unsuccessful, confidently tries alternate mode of attack.
- ( ) 2. Gives everything a fair trial.
- ( ) 3. Persists until convinced of inability to continue independently.
- ( ) 4. Gives up before adequate trial.
- ( ) 5. Melts before slight obstacles or criticism.

## XI. Resistance to Learning

- ( ) 1. Enthusiastic and wholehearted interest in participating and/or leading in all learning activities.
- ( ) 2. Complies readily with all teacher direction and participates as a matter of course in every learning activity.

- ( ) 3. Readily participates and responds willingly to teacher direction in most learning activities, but resists a few.
- ( ) 4. Resists many learning activities or requires constant prodding to keep him working at most learning activities.
- ( ) 5. Strong outright resistance to participation in learning activities and to teacher attempt to motivate learning effort.