

1947

The effect of adjusted basal materials upon achievement in grades two and three.

<https://archive.org/details/effectofadjusted00mayo>

"Downloaded from OpenBU. Boston University's institutional repository."

Mayo, A. F.

1947

The effect of adjusted basal materials upon
achievement in grades 2 and 3.

BOSTON UNIVERSITY
SCHOOL OF EDUCATION

Ed.

LIBRARY

Thesis
Mayo, A. F.
1947

The Gift of ...A. F. Mayo.....

28185

Ed
Thesis
Mayo, J.F.
1947

BOSTON UNIVERSITY
SCHOOL OF EDUCATION

Thesis

THE EFFECT OF ADJUSTED BASAL MATERIALS
UPON ACHIEVEMENT
IN GRADES TWO AND THREE

Submitted by

Amy Florence Mayo

(B. S. in Ed., Boston University, 1941)

In partial fulfillment of requirements for the
degree of Master of Education

1947

- First Reader: Dr. Donald D. Durrell, Professor of Education
Second Reader: Dr. Helen B. Sullivan, Professor of Education
Third Reader: Dr. William C. Kvaraceus, Assistant Professor of Education.

Boston University
School of Education
Library

Gift of A.F. Mayo
School of Education
June 5, 1947
JF124

Acknowledgments

The writer wishes to express her appreciation to Dr. Donald D. Durrell, Dean of the School of Education, Boston University, for his assistance in planning and carrying out this study; to Mr. James Baker, Teaching Fellow, and to Dr. William C. Kvaraceus, Professor of Education, School of Education, Boston University, for help with the statistical tables.

Special thanks are due Mr. James W. Vose, Superintendent of Schools in Marblehead, Massachusetts, for his permission to conduct the study in his school system; to the four principals and ten teachers for their cooperation; and to Virginia B. Doane for typing this thesis.

TABLE OF CONTENTS

CHAPTER	PAGE
I. INTRODUCTION	1
II. REVIEW OF RELATED RESEARCH	2
III. PLAN AND PROCEDURE	15
IV. ANALYSIS OF DATA	22
V. SUMMARY AND CONCLUSIONS	33
VI. SUGGESTIONS FOR FURTHER RESEARCH	35
BIBLIOGRAPHY	36
APPENDIX	39
BOOKS USED IN INFORMAL TEST	

LIST OF TABLES

TABLE	PAGE
I. THE TOTAL NUMBER OF PUPILS AND GRADES TESTED	16
II. MEAN CHRONOLOGICAL AND MENTAL AGES IN MONTHS	17
III. DEGREE OF ADJUSTMENT IN RELATION TO ABILITY	23
IV. MEAN GAIN IN RELATION TO HARD AND ADJUSTED MATERIAL	25
V. MEAN GAIN IN RELATION TO HARD AND ADJUSTED MATERIAL	26
VI. MEAN GAIN IN RELATION TO EASY AND ADJUSTED MATERIAL	27
VII. MEAN GAIN IN RELATION TO EASY AND ADJUSTED MATERIAL	28
VIII. MEAN GAIN IN RELATION TO EASY AND ADJUSTED MATERIAL	29
IX. MEAN GAIN IN RELATION TO EASY AND ADJUSTED MATERIAL	30
X. MASTER TABLE: MEAN GAIN IN RELATION TO HARD, EASY AND ADJUSTED MATERIAL	31

CONTENTS

PAGE	TITLE	PAGE
	THE ALPHABET OF THE HEBREW LANGUAGE	1
10	..... THE HEBREW ALPHABET	1
15	..... THE HEBREW ALPHABET	15
20	..... THE HEBREW ALPHABET	20
25	..... THE HEBREW ALPHABET	25
30	..... THE HEBREW ALPHABET	30
35	..... THE HEBREW ALPHABET	35
40	..... THE HEBREW ALPHABET	40
45	..... THE HEBREW ALPHABET	45
50	..... THE HEBREW ALPHABET	50
55	..... THE HEBREW ALPHABET	55
60	..... THE HEBREW ALPHABET	60
65	..... THE HEBREW ALPHABET	65
70	..... THE HEBREW ALPHABET	70
75	..... THE HEBREW ALPHABET	75
80	..... THE HEBREW ALPHABET	80
85	..... THE HEBREW ALPHABET	85
90	..... THE HEBREW ALPHABET	90
95	..... THE HEBREW ALPHABET	95
100	..... THE HEBREW ALPHABET	100

CONTENTS

Introduction

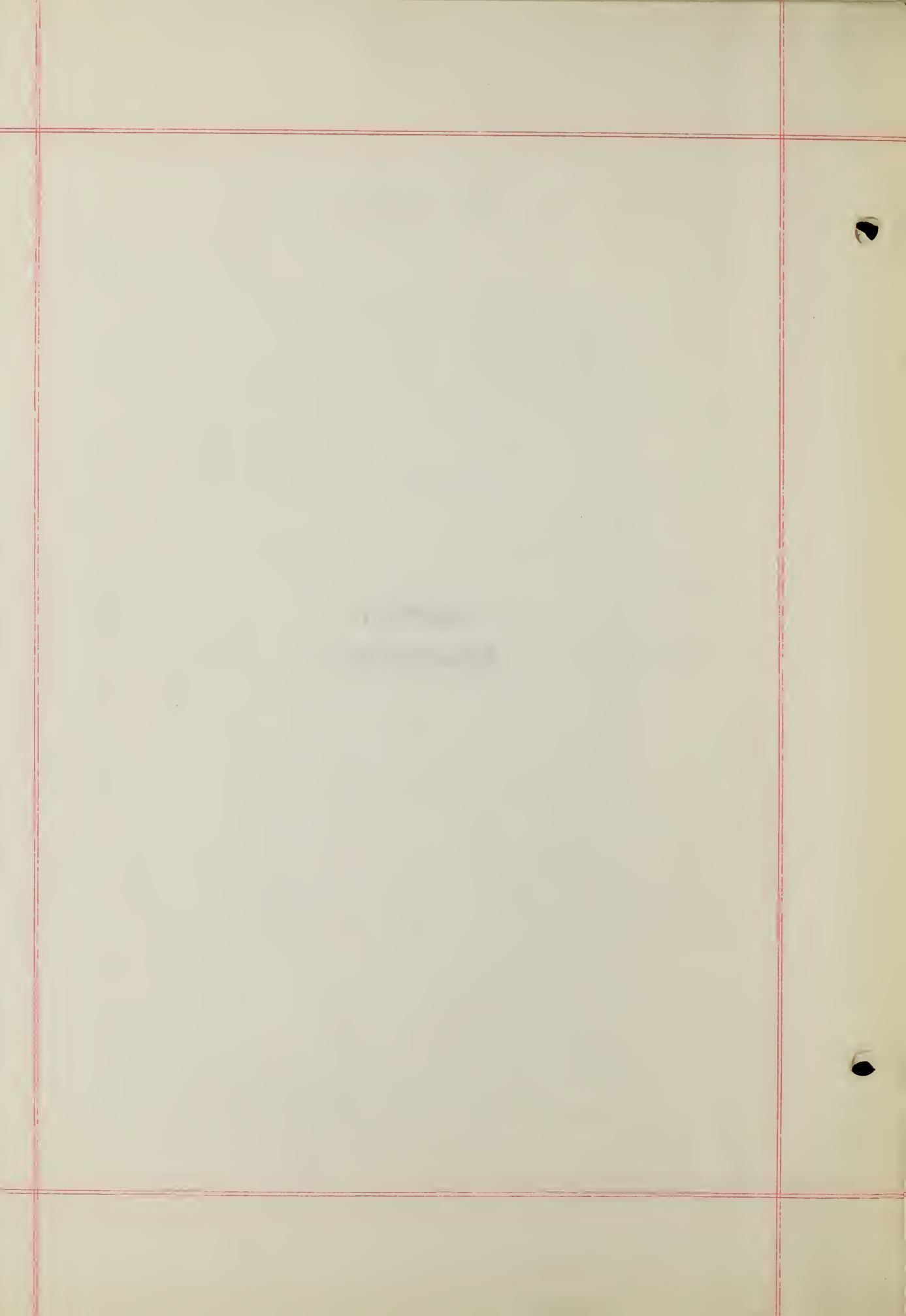
Chapter I

- 1. The first part of the book is devoted to a general survey of the subject.
- 2. The second part is devoted to a detailed study of the various aspects of the subject.
- 3. The third part is devoted to a study of the various methods of the subject.
- 4. The fourth part is devoted to a study of the various applications of the subject.
- 5. The fifth part is devoted to a study of the various results of the subject.

CHAPTER I

INTRODUCTION

The first part of the book is devoted to a general survey of the subject. The second part is devoted to a detailed study of the various aspects of the subject. The third part is devoted to a study of the various methods of the subject. The fourth part is devoted to a study of the various applications of the subject. The fifth part is devoted to a study of the various results of the subject.



CHAPTER I

INTRODUCTION

Purpose of the study

The purpose of this study was:

1. To discover the range of individual reading abilities at second and third grade levels in one school system.
2. To ascertain the amount of adjustment being made to provide for different levels of achievement.
3. To determine the extent to which gains in reading achievement are affected by adjustment of basal materials.

2000

1000000

1000000

1000000

1000000

1000000

1000000

1000000

1000000

1000000

1000000

1000000

1000000

CHAPTER II

REVIEW OF RELATED RESEARCH



CHAPTER II

REVIEW OF RELATED RESEARCH

Since this study is an investigation concerning the effect of adjusted basal reading materials, the related research considers the problem of individual differences; its pertinence to the field of reading; experiments in providing differentiated instruction; the use of basal readers; the value of informal testing; and studies that have been done, relating to the difficulty of materials.

The major problem of the elementary school teacher is how to identify individual needs and how to provide for them. Caswell¹ states, in discussing this factor:

In planning and developing the program of the elementary school, a realistic, sound view of the differences which exist among children and the role these differences should play in the educative process, is essential. Children should be studied to discover what their differences are,

¹ Hollis L. Caswell, Education in the Elementary School (New York: American Book Company, 1942), p. 103.

1890

Journal of the

...

...

...

...

...

...

...

...

...

...

...

...

...

...

...

...

...

...

...

...

not with the idea that these differences should be eliminated, or the program adjusted to them, but rather with the view that they provide the basis upon which rich and varied personalities may be developed and out of which a co-operative society, with maximum complementary factors, may be built.

Considering the varied interests, achievements, and capacities, Barr, Burton, and Brueckner¹ say, "If the school's program is to be at all effective, pupils cannot be treated as if they were all alike."

In the field of reading, this is particularly true, affirms Durrell²: "Children in the same grade will differ greatly in their reading abilities, even though they have received a similar amount and type of reading instruction."

Durrell³ goes on to say:

The goal of reading instruction is to enable each child to advance in skill and interest as

¹ A. S. Barr, William H. Burton, and Leo J. Brueckner, Supervision (New York: D. Appleton-Century Company, 1938), p. 211.

² Donald D. Durrell, Improvement of Basic Reading Abilities (Yonkers-on-Hudson, New York: World Book Company, 1940), p. 38.

³ Ibid., p. 65.

THE UNIVERSITY OF CHICAGO
DEPARTMENT OF CHEMISTRY
530 SOUTH EAST ASIAN AVENUE
CHICAGO, ILLINOIS 60607
TEL: 773-936-3700

RECEIVED
JULY 15 1964

TO THE DIRECTOR
FROM THE DIRECTOR
RE: [Illegible]

[Illegible]

[Illegible]

[Illegible]

rapidly as his abilities permit. This goal can be attained, only, by taking into account individual differences in reading level, in interest, in learning rate, and in types of difficulties,...

Cole¹ believes that the range of speed, comprehension, and vocabulary is never less than four years in any grade, and that the variability is usually the most in the highest grade. She insists that "...there is no efficient way of teaching reading to a class as a whole."

"The wide range of reading abilities within a given grade precludes the possibility of using the same readers for the instruction of all pupils," says Betts².

Hildreth³ attributes many reading disabilities to "undifferentiated and maladapted instruction in the primary years."

¹ Luella Cole, The Improvement of Reading (New York: Farrar and Rinehart Inc., 1938), p. 20.

² Emmett Albert Betts, Foundations of Reading Instruction (New York: American Book Company, 1946), p. 551.

³ Gertrude Hildreth, "Individualizing Reading Instruction," Teachers College Record, 42:123, November, 1940.

Handwritten text at the top of the page, possibly a header or title.

Handwritten text in the upper middle section of the page.

Handwritten text in the middle section of the page.

Handwritten text in the lower middle section of the page.

Handwritten text in the lower section of the page.

Handwritten text at the bottom of the page, possibly a signature or footer.

In a study of eighty-seven third grade pupils, Duffy¹ found that the range of reading achievement was from first to sixth grade, as measured by standardized tests.

Experiments in providing differentiated instruction

Progressive administrators and teachers have already demonstrated that the continuous growth plan with promotion by reading levels is successful. Superintendent De Long² reports favorably on the experiment of abolishing failure and promotion in the first two grades of Ellwood City, Pennsylvania.

Similar good results in Western Springs, Illinois, where the plan includes the first three grades, are reported by Wheat³. Not only is there

¹ Gertrude B. Duffy, "A Diagnostic Study of Reading Difficulties in Third Grade," (unpublished Ed. M. thesis, Boston University School of Education, 1934. Published in part in Education, 56:37-40, September, 1935).

² Vaughn R. De Long, "Primary Promotion by Reading Levels," Elementary School Journal, 38:663-71, May, 1938.

³ Leonard B. Wheat, "The Flexible Progress Group System," Elementary School Journal, 38:264-68, December, 1938.

1. The first part of the report deals with the general situation of the country and the progress of the work during the year.

2. The second part of the report deals with the results of the work done during the year and the progress of the various projects.

3. The third part of the report deals with the financial position of the organization and the results of the various projects.

4. The fourth part of the report deals with the work done during the year and the progress of the various projects.

5. The fifth part of the report deals with the work done during the year and the progress of the various projects.

an elimination of failure and repetition, but acceleration without skipping is made possible, when promotion is based on reading levels.

Kvaraceus and Wiles¹ wrote of an experiment in which the pupils in a second grade were grouped according to achievement and apparent abilities in three subjects.

Adjustments within the classroom are being made constantly to produce more effective learning. Dunklin² found a substantial reduction of failure in first grade reading, by means of adjusted instruction. He studied 120 first grade pupils, who were potential failures in November. The experimental group received individualized instruction with frequent use of informal diagnostic tests, whereas, the control children had the usual teaching, since they were known, only,

¹ William C. Kvaraceus and Marion E. Wiles, "An Experiment in Grouping for Effective Learning," Elementary School Journal, 38:264-68, December, 1938.

² Howard T. Dunklin, "The Prevention of Failure in First Grade Reading by Means of Adjusted Instruction," (Contributions to Education no. 802, Teachers College, Columbia University, 1935).

Faint, illegible text, possibly bleed-through from the reverse side of the page. The text is arranged in several paragraphs and is mostly obscured by the low resolution and blurriness of the scan.

to the examiner. The percentage of failure on school records of the experimental group was 16.6% as compared with 61.1% of the control groups; on standardized tests, 11.1% of the experimental group and 55.5% of the control groups failed to attain a grade score of 1.75 at the end of grade one.

Whitehead¹ concluded after his study of the range of ability:

To describe a pupil as a fourth, fifth, or sixth grader simply means that he is a member of a group, whose average ability is on the fourth, or fifth, or sixth grade level. It is no indication of the ability of that child.

The use of basal texts

There has been a reaction against the regimented use of basal readers. Betts² says:

Progress is paced and interest is stifled, when every pupil in a given grade is required to go through the same motions as every other pupil and must do with the same basal reader and the accompanying workbook.

¹ John Andrews Whitehead, "An Analysis of the Ability of Intermediate Grade Pupils to Understand and Interpret Three Basic Textbooks," (unpublished Ed. M. thesis, Boston University School of Education, 1942).

² Emmett A. Betts, "Differentiated Instruction in Reading Activities," American School Board Journal, Vol. 100, No. 5, May and June, 1940, p. 29.

1

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

Dolch¹ reports that many school systems are adopting several sets of basic readers, using the easiest books for the slowest group. Another plan is to keep the regular basic book for the class reading of the slow group and to let the others read it for recreation.

When reading is learned through functional activities, the basic set of readers will disappear, says Smith², who asserts that:

It may continue to wield its power for fifteen years or for fifty years, but in time it will march silently out of the classroom and be relegated to dusty attics, along with its progenitor, the hornbook.

Boney's³ study confirmed this belief. He sent questionnaires to school administrators for their appraisals of basal reading programs. All but four of the twenty-five answers were in favor of making greater use of individualistic materials.

¹ Edward W. Dolch, Teaching Primary Reading (Champaign, Illinois: The Garrard Press, 1941), p. 268.

² Nila Banton Smith, American Reading Instruction (New York: Silver, Burdett and Company, 1934), p. 267.

³ C. DeWitt Boney, "Basal Readers," Elementary English Review, Vol. 15, No. 4, April, 1938, pp. 133-37.

Faint, illegible text, possibly bleed-through from the reverse side of the page. The text is arranged in several paragraphs and is mostly illegible due to fading and low contrast.

Informal testing

Harris¹ asserts that materials must be selected "of the appropriate level of difficulty"; however, those suitable reading materials can be utilized only if the appropriate instructional level of the pupil, at any given time, can be determined.

McCallister² suggests that informal tests of reading ability frequently secure more normal reactions from the pupil than do standard tests, and, therefore, are indispensable.

A combination of both formal and informal testing is necessary for a complete picture, believes Betts³, who says:

The analysis of reading problems may begin with the administration of a standardized test of reading achievement, but it is not completed until a study is made of the child, as he reacts to the instructional materials in the classroom.

¹ Albert J. Harris, How to Increase Reading Ability (New York: Longmans, Green and Company, 1940), p. 170.

² James M. McCallister, Remedial and Corrective Instruction in Reading (New York: D. Appleton-Century Company, 1936), pp. 73-74.

³ Emmett A. Betts, "Corrective and Remedial Cases," Visual Digest, Vol. II, No. 4, Spring, 1947. p. 44.

The first part of the report deals with the general situation of the country and the progress of the work done during the year. It is followed by a detailed account of the various projects and the results achieved. The report concludes with a summary of the work done and a list of the names of the persons who have been engaged in the work.

The work done during the year has been very satisfactory and it is hoped that the results will be of great value to the country. The progress made in the various projects has been very good and it is hoped that the results will be of great value to the country.

The work done during the year has been very satisfactory and it is hoped that the results will be of great value to the country. The progress made in the various projects has been very good and it is hoped that the results will be of great value to the country.

The work done during the year has been very satisfactory and it is hoped that the results will be of great value to the country. The progress made in the various projects has been very good and it is hoped that the results will be of great value to the country.

The work done during the year has been very satisfactory and it is hoped that the results will be of great value to the country. The progress made in the various projects has been very good and it is hoped that the results will be of great value to the country.

The work done during the year has been very satisfactory and it is hoped that the results will be of great value to the country. The progress made in the various projects has been very good and it is hoped that the results will be of great value to the country.

The work done during the year has been very satisfactory and it is hoped that the results will be of great value to the country. The progress made in the various projects has been very good and it is hoped that the results will be of great value to the country.

The work done during the year has been very satisfactory and it is hoped that the results will be of great value to the country. The progress made in the various projects has been very good and it is hoped that the results will be of great value to the country.

The work done during the year has been very satisfactory and it is hoped that the results will be of great value to the country. The progress made in the various projects has been very good and it is hoped that the results will be of great value to the country.

The work done during the year has been very satisfactory and it is hoped that the results will be of great value to the country. The progress made in the various projects has been very good and it is hoped that the results will be of great value to the country.

Durrell¹ stresses the value of informal tests to "...obtain relatively precise knowledge of the instructional needs..." of pupils within a classroom.

Gates² advocates the frequent use of informal appraisals as a necessary part of regular classroom procedure.

High correlations were found between ratings given by teachers, as a result of informal tests, and composite standard test scores in a study reported by Daniels³.

¹ Durrell, op. cit. p. 18.

² Arthur I. Gates, "General Recommendations Concerning Programs for Evaluating Achievement in Reading," Thirty-Sixth Yearbook of the National Society for the Study of Education, Part I (Bloomington, Illinois: Public School Publishing Company, 1937), pp. 359-88.

³ Katharine H. Daniels, "An Evaluation of Certain Informal Tests," (unpublished Ed. M. thesis, Boston University School of Education, 1940).

Faint, illegible text at the top of the page, possibly a header or introductory paragraph.

Second block of faint, illegible text in the middle of the page.

Third block of faint, illegible text at the bottom of the page.

An informal reading inventory was employed by Killgallon¹ in his study of fourth-grade pupil adjustments, in language situations.

He found that the standardized test placed pupils about one grade above their placement estimated from the reading inventory.

Wheelock² found that the results of the informal tests showed lower achievement than did the standard tests.

The value of informal testing cannot be ignored in a program that attempts to discover differences and to provide for them adequately.

¹ P. A. Killgallon, "A Study of Relationships among Certain Pupil Adjustments in Reading Situations," (unpublished Doctor's dissertation, Pennsylvania State College, State College, Pennsylvania, 1942).

² Elsie K. Wheelock, "A Survey of Specific Reading Skills in a Single Elementary School as a Basis for Building a More Effective Reading Program," (unpublished Ed. M. thesis, Boston University School of Education, 1942).

Determining difficulty of material

Betts'¹ criteria for evaluating the suitability of instructional material include seventy-five percent comprehension, ninety-five percent accurate pronunciation, ability to anticipate meaning, and absence of strain or fatigue.

McClatchy's² goal for pupils at the end of grade three is that they:

...be able to read aloud with sufficient fluency to cover a selection using common words and expressing straight-forward information at about 100 words a minute with no more than one error.

Goold³ reported, after a survey of the suitability of instructional materials in grades two and three, that the percentage of pupils reading at grade level was high; that only a few reading materials were

¹ Emmett Albert Betts, Foundations of Reading Instruction (New York: American Book Company, 1946), pp. 448-49.

² Josephine H. McClatchy, "The Administrator's Responsibility," Educational Research Bulletin, 20:151, September, 1941.

³ Charlotte E. Goold, "A Survey of Oral Reading Errors and Suitability of Instructional Materials in Grades Two and Three," (unpublished Ed. M. thesis, Boston University School of Education, 1942).

Faint, illegible text, possibly bleed-through from the reverse side of the page. The text is arranged in several paragraphs and is mostly centered on the page.

too easy, as to speed; but that many of the pupils were reading material too difficult, compared to their rate of speed.

Beal¹ devised a technique for determining the difficulty of primary grade reading. She arranged twenty selections in a tentative order of difficulty and then recorded the difficulties encountered by sixty children in second and third grades. The records of those various difficulties were combined into a single rating of difficulty for each selection.

Killgallon² found a ratio of one to twenty between the word perception errors and the number of running words on the instructional level.

Limitations of previous studies

Milazzo³ made a study of 104 children in grades

¹ Alice Burton Beal, "An Evaluation of Techniques for Determining the Difficulty of Primary Grade Reading," (unpublished Ed. M. thesis, Boston University School of Education, 1937).

² Killgallon, op. cit., p. 179.

³ Marjorie T. Milazzo, "The Effect of Adjusted Basal Materials on Achievement in Grades Two and Three," (unpublished Ed. M. thesis, Boston University, School of Education, 1946).

1870
The first of these was the
... ..
... ..

... ..
... ..
... ..
... ..
... ..
... ..
... ..

... ..
... ..

... ..
... ..

... ..
... ..
... ..

... ..
... ..
... ..
... ..

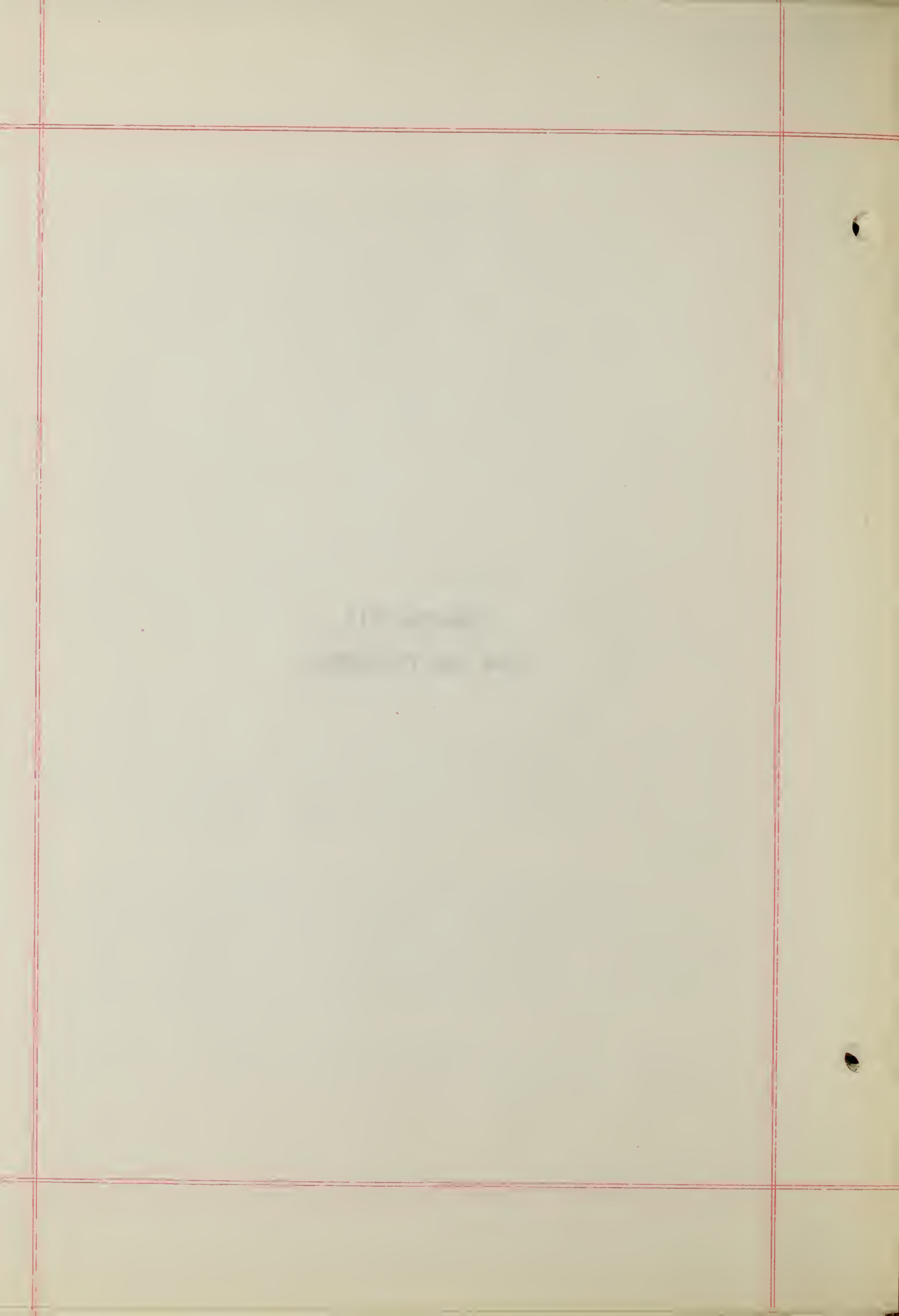
two and three, using the same general procedure as in the present investigation. Her major findings were (1) 44 per cent of the children were reading at their achievement level, 55 per cent were reading below their achievement level, and only 1 per cent was reading above achievement level; (2) the results of the informal test were lower than those on the Durrell Paragraphs; (3) no significant difference in the mean gain in rate, or in the mean gain in reduction of errors; but (4) a significant difference in mean gain in paragraphs in favor of those reading below achievement level.

The present experiment deals with a larger number of pupils from all second and third grades in one school system. This increases the chance of finding more pupils, who are reading above achievement level.

An attempt will be made to determine how much adjustment of basic materials is being provided, and what effect such adjustment may have on reading gains.

CHAPTER III

PLAN AND PROCEDURE



CHAPTER III

PLAN AND PROCEDURE

Restatement of problem

The purpose of this study was (1) to discover the range of individual reading abilities at second and third grade levels in one school system; (2) to ascertain the amount of adjustment being made to provide for different levels of achievement; (3) to determine the extent to which gains in reading achievement are affected by adjustment of basal materials.

Description of population

This study included 306 children in grades two and three from the four elementary schools in a residential town not far from Boston. Ten teachers, four second grades, four third grades, and two mixed second and third grades are represented. Table I shows the distribution.

TABLE I
THE TOTAL NUMBER OF PUPILS AND GRADES TESTED

School	Grade II			Grade III			Grades II and III		
	B	G	Total	B	G	Total	B	G	Totals
I	17	21	38	25	17	42	42	38	80
II	29	21	50	31	18	49	60	39	99
III	11	19	30	17	17	34	28	36	64
IV	17	14	31	14	18	32	31	32	63
Totals	74	75	149	87	70	157	161	145	306

Chronological and mental ages were obtained from the files. The results for the second grade children were from The Pintner-Cunningham General Ability Test¹ taken while they were in Kindergarten. Third-grade test results are from the Kuhlmann-Anderson Tests², which were taken while the children were in the second grade. Table II shows the chronological and mental ages of the group.

¹ Published by World Book Company, Yonkers-on-Hudson, New York, 1938.

² Published by Educational Test Bureau, Philadelphia, 1942.

Table 1

Summary of the results of the experiments conducted during the period 1950-1952

Year	1950		1951		1952		Total
	1	2	1	2	1	2	
1	10	15	12	18	14	20	64
2	12	18	15	22	16	24	77
3	14	20	18	26	18	28	86
4	16	22	20	28	20	30	96
5	18	24	22	30	22	32	106
6	20	26	24	32	24	34	116
7	22	28	26	34	26	36	126
8	24	30	28	36	28	38	136
9	26	32	30	38	30	40	146
10	28	34	32	40	32	42	156
11	30	36	34	42	34	44	166
12	32	38	36	44	36	46	176
13	34	40	38	46	38	48	186
14	36	42	40	48	40	50	196
15	38	44	42	50	42	52	206
16	40	46	44	52	44	54	216
17	42	48	46	54	46	56	226
18	44	50	48	56	48	58	236
19	46	52	50	58	50	60	246
20	48	54	52	60	52	62	256
21	50	56	54	62	54	64	266
22	52	58	56	64	56	66	276
23	54	60	58	66	58	68	286
24	56	62	60	68	60	70	296
25	58	64	62	70	62	72	306
26	60	66	64	72	64	74	316
27	62	68	66	74	66	76	326
28	64	70	68	76	68	78	336
29	66	72	70	78	70	80	346
30	68	74	72	80	72	82	356
31	70	76	74	82	74	84	366
32	72	78	76	84	76	86	376
33	74	80	78	86	78	88	386
34	76	82	80	88	80	90	396
35	78	84	82	90	82	92	406
36	80	86	84	92	84	94	416
37	82	88	86	94	86	96	426
38	84	90	88	96	88	98	436
39	86	92	90	98	90	100	446
40	88	94	92	100	92	102	456
41	90	96	94	102	94	104	466
42	92	98	96	104	96	106	476
43	94	100	98	106	98	108	486
44	96	102	100	108	100	110	496
45	98	104	102	110	102	112	506
46	100	106	104	112	104	114	516
47	102	108	106	114	106	116	526
48	104	110	108	116	108	118	536
49	106	112	110	118	110	120	546
50	108	114	112	120	112	122	556
51	110	116	114	122	114	124	566
52	112	118	116	124	116	126	576
53	114	120	118	126	118	128	586
54	116	122	120	128	120	130	596
55	118	124	122	130	122	132	606
56	120	126	124	132	124	134	616
57	122	128	126	134	126	136	626
58	124	130	128	136	128	138	636
59	126	132	130	138	130	140	646
60	128	134	132	140	132	142	656
61	130	136	134	142	134	144	666
62	132	138	136	144	136	146	676
63	134	140	138	146	138	148	686
64	136	142	140	148	140	150	696
65	138	144	142	150	142	152	706
66	140	146	144	152	144	154	716
67	142	148	146	154	146	156	726
68	144	150	148	156	148	158	736
69	146	152	150	158	150	160	746
70	148	154	152	160	152	162	756
71	150	156	154	162	154	164	766
72	152	158	156	164	156	166	776
73	154	160	158	166	158	168	786
74	156	162	160	168	160	170	796
75	158	164	162	170	162	172	806
76	160	166	164	172	164	174	816
77	162	168	166	174	166	176	826
78	164	170	168	176	168	178	836
79	166	172	170	178	170	180	846
80	168	174	172	180	172	182	856
81	170	176	174	182	174	184	866
82	172	178	176	184	176	186	876
83	174	180	178	186	178	188	886
84	176	182	180	188	180	190	896
85	178	184	182	190	182	192	906
86	180	186	184	192	184	194	916
87	182	188	186	194	186	196	926
88	184	190	188	196	188	198	936
89	186	192	190	198	190	200	946
90	188	194	192	200	192	202	956
91	190	196	194	202	194	204	966
92	192	198	196	204	196	206	976
93	194	200	198	206	198	208	986
94	196	202	200	208	200	210	996
95	198	204	202	210	202	212	1006
96	200	206	204	212	204	214	1016
97	202	208	206	214	206	216	1026
98	204	210	208	216	208	218	1036
99	206	212	210	218	210	220	1046
100	208	214	212	220	212	222	1056

Experimental results are given in the following table.

The results show that the rate of increase is constant.

The results also show that the rate of increase is constant.

The results also show that the rate of increase is constant.

The results also show that the rate of increase is constant.

The results also show that the rate of increase is constant.

The results also show that the rate of increase is constant.

The results also show that the rate of increase is constant.

The results also show that the rate of increase is constant.

The results also show that the rate of increase is constant.

The results also show that the rate of increase is constant.

The results also show that the rate of increase is constant.

The results also show that the rate of increase is constant.

TABLE II
 MEAN CHRONOLOGICAL AND MENTAL AGES IN MONTHS

Grade	No.	Mean C.A.	S.D.	Mean M.A.	S.D.
II	149	87.47	5.85	95.18	10.62
III	157	104.17	7.26	111.33	5.79

The chronological ages in grade two ranged from 6.5 to 9.5 with a mean of 7.3, while the mental ages ranged from 5.8 to 11.3 with a mean of 7.11. This indicated that the group is above average in mental capacity.

The chronological ages in grade three ranged from 7.8 to 10.11 with a mean of 8.8, while the mental ages ranged from 7.5 to 10.8 with a mean of 9.3. This group is also above average.

The testing program

Four tests were administered to each child by the writer: an informal test from the child's classroom reader; paragraphs from Durrell Analysis of

TABLE

TABLE showing the results of the analysis of the soil samples collected during the investigation.

Sample No.	Location	Depth (ft.)	Moisture (%)	pH	Nitrogen (%)	Phosphorus (ppm)	Potassium (ppm)
1	Field 1	0-1	12.5	6.8	0.15	15	120
2	Field 1	1-2	11.8	6.9	0.12	12	110
3	Field 2	0-1	13.2	6.7	0.18	18	130
4	Field 2	1-2	12.8	6.8	0.16	16	125
5	Field 3	0-1	14.1	6.6	0.22	22	140
6	Field 3	1-2	13.5	6.7	0.20	20	135

The results of the analysis of the soil samples collected during the investigation are presented in the table above. The soil samples were collected from three different fields (Field 1, Field 2, and Field 3) at two different depths (0-1 ft. and 1-2 ft.). The soil samples were analyzed for moisture content, pH, and the content of nitrogen, phosphorus, and potassium. The results show that the soil samples collected from Field 3 have the highest moisture content, pH, and content of nitrogen, phosphorus, and potassium. The soil samples collected from Field 1 have the lowest moisture content, pH, and content of nitrogen, phosphorus, and potassium. The soil samples collected from Field 2 have intermediate moisture content, pH, and content of nitrogen, phosphorus, and potassium.

TABLE continued

The results of the analysis of the soil samples collected during the investigation are presented in the table above. The soil samples were collected from three different fields (Field 1, Field 2, and Field 3) at two different depths (0-1 ft. and 1-2 ft.). The soil samples were analyzed for moisture content, pH, and the content of nitrogen, phosphorus, and potassium. The results show that the soil samples collected from Field 3 have the highest moisture content, pH, and content of nitrogen, phosphorus, and potassium. The soil samples collected from Field 1 have the lowest moisture content, pH, and content of nitrogen, phosphorus, and potassium. The soil samples collected from Field 2 have intermediate moisture content, pH, and content of nitrogen, phosphorus, and potassium.

Reading Difficulty¹; and two forms of Stanford Achievement Test².

The informal test

Books in use in the ten classrooms were arbitrarily rated into three levels of difficulty, according to the number of pages in each book. The first third of a book was rated Low, the middle third was rated Middle, and the last third was rated High. The scale was as follows:

High Third	3.8
Middle Third	3.5
Low Third	3.2
High Second	2.8
Middle Second	2.5
Low Second	2.2
High First	1.8
Middle First	1.5
Low First	1.2
High Primer	P.8
Middle Primer	P.5
Low Primer	P.2

¹ Published by World Book Company, Yonkers-on-Hudson, New York, 1933.

² Published by World Book Company, Yonkers-on-Hudson, New York, 1941.

THE UNIVERSITY OF CHICAGO

PHYSICS DEPARTMENT

PHYSICS 311

PROBLEM SET 10
Due: Friday, November 10, 1995
1. A particle of mass m moves in a circular path of radius r with constant speed v . Find the magnitude of the centripetal force acting on the particle.
2. A particle of mass m moves in a circular path of radius r with constant speed v . Find the magnitude of the centripetal force acting on the particle.
3. A particle of mass m moves in a circular path of radius r with constant speed v . Find the magnitude of the centripetal force acting on the particle.

1.	$F = \frac{mv^2}{r}$
2.	$F = \frac{mv^2}{r}$
3.	$F = \frac{mv^2}{r}$

PROFESSOR JOHN C. SMITH
PHYSICS DEPARTMENT
UNIVERSITY OF CHICAGO
CHICAGO, ILLINOIS 60637

A 100-word selection of material that had been taken recently in class was chosen from each of the eleven books being used at the time. A record was made of the time, the number of errors and comprehensions. Errors included miscalling, omissions, additions, repetitions and ignoring periods. After a hesitation of five seconds, the word was told to the child.

The Durrell Paragraphs

The paragraphs designed for determining oral reading ability from the Durrell Analysis of Reading Difficulty were used for the second test. Norms are included, which provide a basis for comparison with the results of the informal test.

The Stanford Achievement Test

All children in grades two and three were to have a form of this test at the end of the year, so it was decided to use Form E in January and Form F in May, 1946. The composite grade-equivalent scores were compared to measure gain during the four-month period. The lower limits of this test did not cover the poorest readers in the second grade in January, nor did the upper limits cover the best readers in the third grade in May.

The testing procedure

The informal test and the Durrell Paragraphs were given during the month of January. The books in use at the time are listed in the Appendix.

First, each child read to the examiner the 100-word selection from his own textbook. The passage was always chosen from a section only recently taken in class, so the comprehension results are not significant. No attempt was made to classify the kinds of errors.

Immediately following the informal test, the Durrell Paragraphs were read in order to determine each child's level of ability. The amount of adjustment of classroom material to ability was found by comparing the results of the two tests.

Directions accompany the Durrell tests and they were followed. The general procedure was to begin with the paragraph that seemed most suitable, judging from the child's performance on the informal test. If two or more errors were made on the initial paragraph, the preceding one was read and so down the list, until a paragraph was read without errors. The child then continued to read increasingly difficult paragraphs, until seven or more errors were made on

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

...

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

a particular one.

Reading levels were obtained by the use of the medians, as directed in the Durrell manual. The scores High Third, Middle Third, etc., were changed to 3.8, 3.5, etc., to match the scale used on the informal test.

The Stanford Achievement Tests were administered exactly as the directions indicated. In most cases, the room teacher was present during the testing, but all tests were given and scored by the writer.

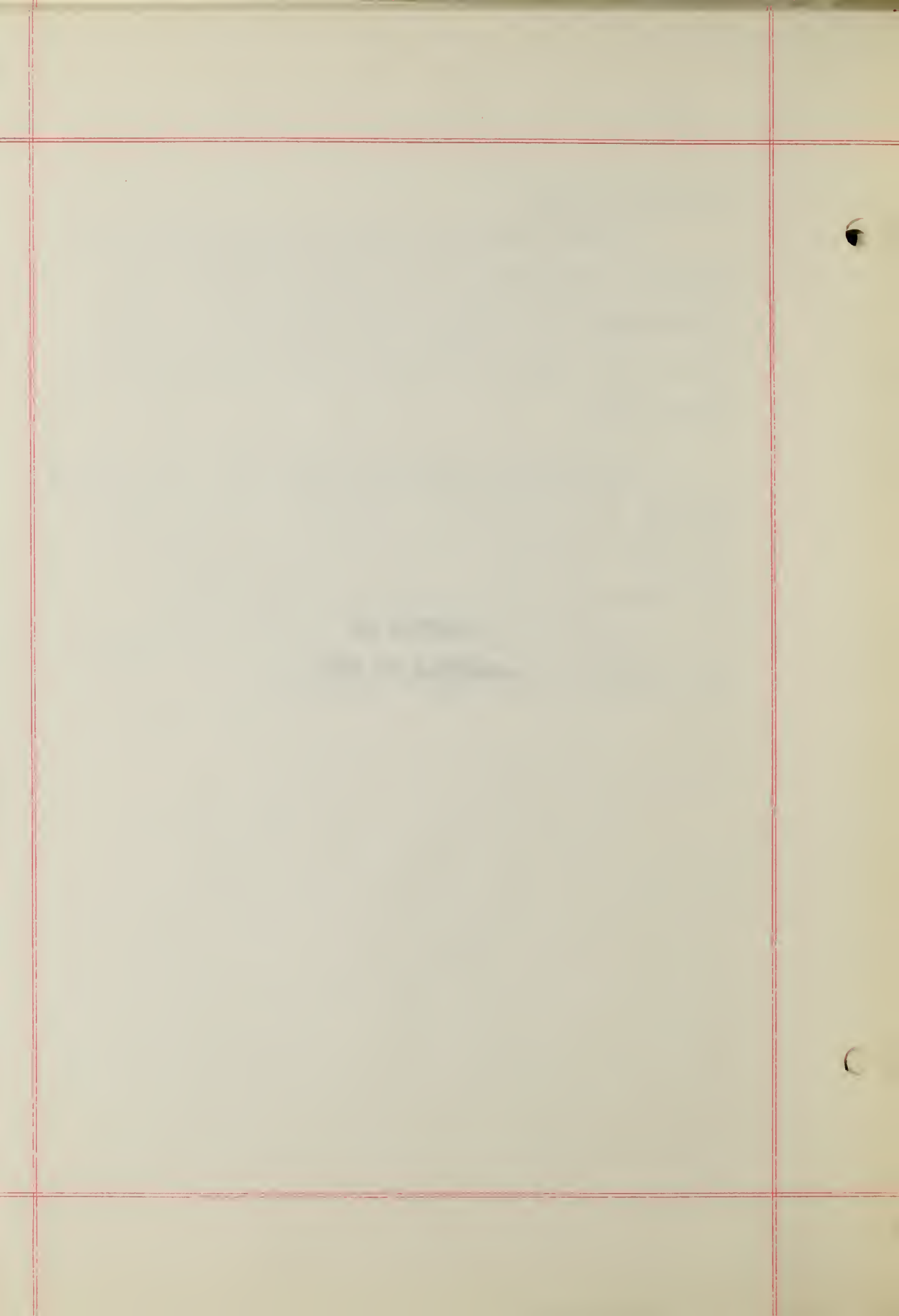
Data from the four reading tests were analyzed and are presented in the next chapter.

1870

The first of these was the
... ..
... ..
... ..
... ..
... ..

The second of these was the
... ..
... ..
... ..
... ..
... ..

CHAPTER IV
ANALYSIS OF DATA



CHAPTER IV

ANALYSIS OF DATA

The purpose of this study was (1) to discover the range of individual reading abilities at second and third grade levels in one school system; (2) to ascertain the amount of adjustment being made to provide for different levels of achievement; (3) to determine the extent to which gains in reading achievement are affected by adjustment of basal materials.

Range of Ability

The range of reading ability in grade two and in grade three was determined by use of the oral reading section of the Durrell Paragraphs. A spread of approximately four grades was found within each of the two grades. In the second grade, the range of ability was from Middle Primer to High Fourth. The third grade showed a range from High First to Middle Fifth.

The basal reading books in use in the classrooms, at that time, showed a much narrower range. In the second grade, the difficulty of the material ranged from Middle Primer to High Second. The third grade

April 10, 1944

The purpose of this letter is to inform you of the results of the investigation conducted by the Bureau of the Internal Security of the Department of Justice, in connection with the activities of the Communist Party, U.S.A., in the State of New York, during the period from 1935 to 1943.

The results of the investigation are as follows:

Summary of Findings

The results of the investigation indicate that the Communist Party, U.S.A., has been active in the State of New York, during the period from 1935 to 1943, in connection with the activities of the Communist Party, U.S.A., in the State of New York, during the period from 1935 to 1943.

The results of the investigation are as follows:

1944

The results of the investigation indicate that the Communist Party, U.S.A., has been active in the State of New York, during the period from 1935 to 1943, in connection with the activities of the Communist Party, U.S.A., in the State of New York, during the period from 1935 to 1943.

The results of the investigation are as follows:

material ranged from Middle Second to High Third.

Degree of adjustment

The relative difficulty of material for each child was found by a comparison between his level of reading ability and the level of the material in use in the classroom. Table III shows the number of children for the various degrees of adjustment. The Adjusted Group includes those children whose ability and classroom material agree within five months (-2 to + 2).

TABLE III

DEGREE OF ADJUSTMENT IN RELATION TO ABILITY

Relative difficulty of material	Grade II	Grade III	Total
8 months or more too hard	4	10	14
3 to 7 months too hard	22	35	57
Adjusted	27	28	55
3 to 7 months too easy	53	37	90
8 to 12 months too easy	24	23	47
13 to 17 months too easy	16	20	36
18 or more months too easy	3	4	7
	149	157	306

1921-1922 ...

...

...

III

...

...
10	10	0	...
20	20	0	...
30	30	74	...
40	40	...	...
50	50	...	...
60	60	...	...
70	70	...	...
80	80	...	...
90	90	...	...
100	100	...	...

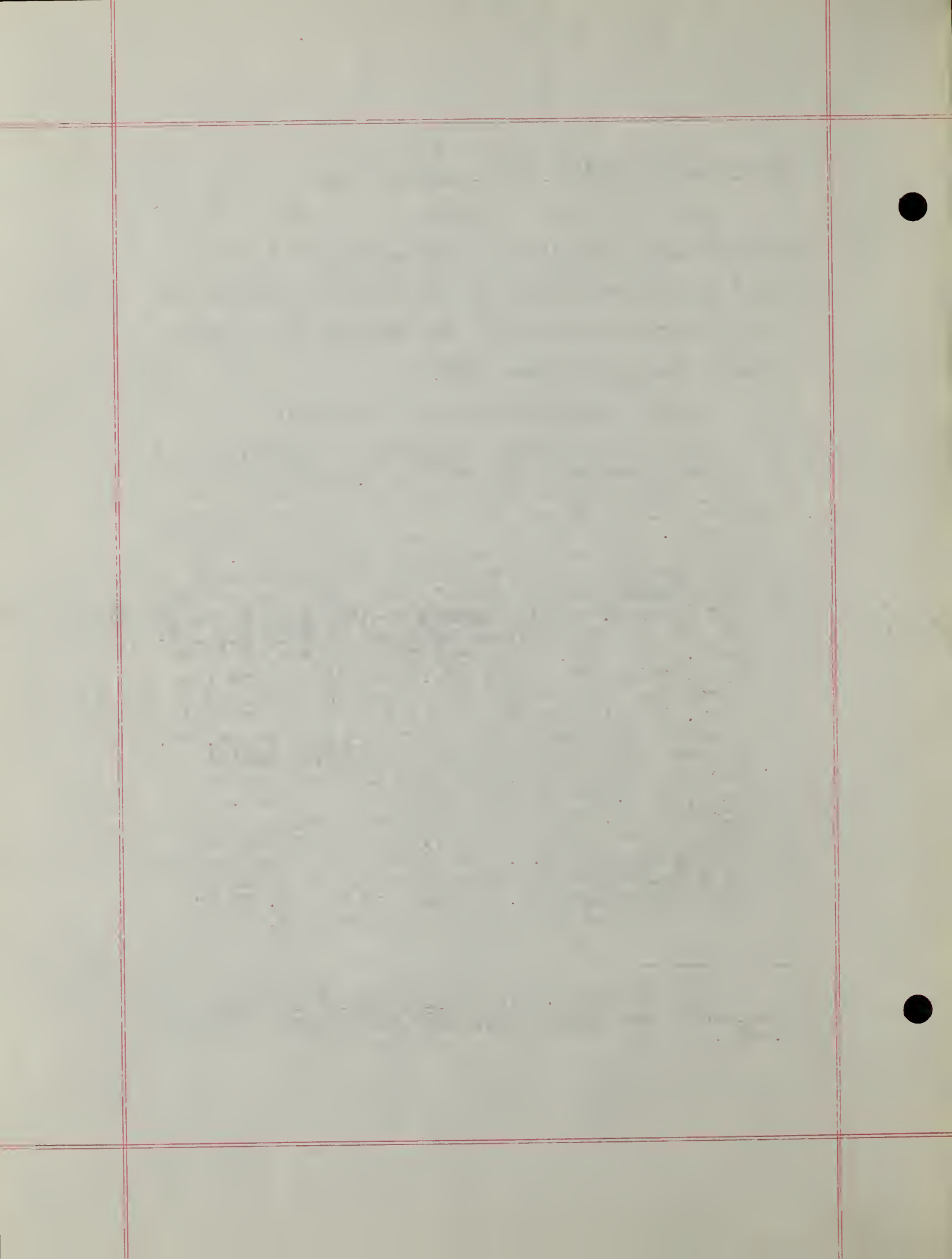
The effect of adjustment on achievement

The relationship between the degree of adjustment of basal materials and the amount of gain was found by the computation of the Standard Error of the mean, the Standard Error of the difference and the Critical Ratios for each mean.

Mills¹ makes the following statement:

If a given difference between hypothetical and observed values would occur as a result of chance, only one time out of one hundred, or less frequently, we may say that the difference is significant. This means that the results are not consistent with the hypothesis we have set up. If the discrepancy between theory and observation might occur more frequently than one time out of one hundred, solely because of the play of chance, we may say the difference is not clearly significant. The results are not inconsistent with the hypothesis. The value of T (the difference between the hypothetical value and the observed mean, in units of the standard error of the mean), corresponding to a probability of 1/100 is 2.576. One hundredth part of the area under a normal curve lies at a distance from the mean, on the axis, of 2.576 standard deviations or more. Accordingly, tests of significance may be applied with direct reference to T, interpreted as a normal deviate (i.e., as a deviation from the mean of a normal distribution expressed in units of standard deviation). A value of T of 2.576 or more indicates a significant difference, while a

¹ Frederick C. Mills, Statistical Methods (Revised), (New York: Henry Holt and Company, 1938), p. 471.



value of less than 2.576 indicates that the results are not inconsistent with the hypothesis in question.

In the light of the above information, any mean with a Critical Ratio of 2.576 or better was interpreted as statistically significant.

Table IV shows a mean gain of 5.45 months for the Adjusted group and a mean gain of 3.71 for the group reading material that was eight months or more too hard. A difference of 1.74 shows a positive relationship in favor of the Adjusted group.

TABLE IV
MEAN GAIN IN RELATION TO HARD AND ADJUSTED MATERIAL

Difficulty of Selection	No.	Mean Gain	S.D.	S.E. M.	Diff.	S.E. Diff.	C.R.
8 months or more too hard	14	3.71	2.28	.603			
Adjusted	55	5.45	3.31	.446	1.74	.75	2.32

The Critical Ratio of 2.32 indicates that the results are not statistically significant, which fact may be due to the small number of cases.

Handwritten text at the top of the page, possibly a title or header.

Main body of handwritten text, consisting of several lines of cursive script.

Handwritten text centered on the page, possibly a signature or date.

Handwritten text at the bottom of the main section, possibly a closing or footer.

Handwritten text in the first row of the table.	Handwritten text in the second row of the table.
Handwritten text in the third row of the table.	Handwritten text in the fourth row of the table.
Handwritten text in the fifth row of the table.	Handwritten text in the sixth row of the table.
Handwritten text in the seventh row of the table.	Handwritten text in the eighth row of the table.
Handwritten text in the ninth row of the table.	Handwritten text in the tenth row of the table.

Handwritten text at the bottom of the page, possibly a final note or signature.

Table V shows a mean gain of 3.51 for the group reading material that was three to seven months too hard. A difference of 1.94 shows a positive relationship in favor of the Adjusted group.

TABLE V
MEAN GAIN IN RELATION TO HARD AND ADJUSTED MATERIAL

Difficulty of Selection	No.	Mean Gain	S.D.	S.E. M.	Diff.	S.E. Diff.	C.R.
3 to 7 months too hard	57	3.51	2.56	.339	1.94	.56	3.50
Adjusted	55	5.45	3.31	.446			

The Critical Ratio of 3.50 indicates a statistical significance.

The first part of the report deals with the general
 and historical aspects of the subject and with the
 organization of the work. The second part is
 devoted to the study of the various phases of the
 process.

Phase I		Phase II		Phase III	
Time	Temp.	Time	Temp.	Time	Temp.
0.5	100	1.0	110	1.5	120
1.0	110	1.5	120	2.0	130
1.5	120	2.0	130	2.5	140
2.0	130	2.5	140	3.0	150
2.5	140	3.0	150	3.5	160
3.0	150	3.5	160	4.0	170
3.5	160	4.0	170	4.5	180
4.0	170	4.5	180	5.0	190
4.5	180	5.0	190	5.5	200
5.0	190	5.5	200	6.0	210
5.5	200	6.0	210	6.5	220
6.0	210	6.5	220	7.0	230
6.5	220	7.0	230	7.5	240
7.0	230	7.5	240	8.0	250
7.5	240	8.0	250	8.5	260
8.0	250	8.5	260	9.0	270
8.5	260	9.0	270	9.5	280
9.0	270	9.5	280	10.0	290
9.5	280	10.0	290	10.5	300
10.0	290	10.5	300	11.0	310
10.5	300	11.0	310	11.5	320
11.0	310	11.5	320	12.0	330
11.5	320	12.0	330	12.5	340
12.0	330	12.5	340	13.0	350
12.5	340	13.0	350	13.5	360
13.0	350	13.5	360	14.0	370
13.5	360	14.0	370	14.5	380
14.0	370	14.5	380	15.0	390
14.5	380	15.0	390	15.5	400
15.0	390	15.5	400	16.0	410
15.5	400	16.0	410	16.5	420
16.0	410	16.5	420	17.0	430
16.5	420	17.0	430	17.5	440
17.0	430	17.5	440	18.0	450
17.5	440	18.0	450	18.5	460
18.0	450	18.5	460	19.0	470
18.5	460	19.0	470	19.5	480
19.0	470	19.5	480	20.0	490
19.5	480	20.0	490	20.5	500
20.0	490	20.5	500	21.0	510
20.5	500	21.0	510	21.5	520
21.0	510	21.5	520	22.0	530
21.5	520	22.0	530	22.5	540
22.0	530	22.5	540	23.0	550
22.5	540	23.0	550	23.5	560
23.0	550	23.5	560	24.0	570
23.5	560	24.0	570	24.5	580
24.0	570	24.5	580	25.0	590
24.5	580	25.0	590	25.5	600
25.0	590	25.5	600	26.0	610
25.5	600	26.0	610	26.5	620
26.0	610	26.5	620	27.0	630
26.5	620	27.0	630	27.5	640
27.0	630	27.5	640	28.0	650
27.5	640	28.0	650	28.5	660
28.0	650	28.5	660	29.0	670
28.5	660	29.0	670	29.5	680
29.0	670	29.5	680	30.0	690
29.5	680	30.0	690	30.5	700
30.0	690	30.5	700	31.0	710
30.5	700	31.0	710	31.5	720
31.0	710	31.5	720	32.0	730
31.5	720	32.0	730	32.5	740
32.0	730	32.5	740	33.0	750
32.5	740	33.0	750	33.5	760
33.0	750	33.5	760	34.0	770
33.5	760	34.0	770	34.5	780
34.0	770	34.5	780	35.0	790
34.5	780	35.0	790	35.5	800
35.0	790	35.5	800	36.0	810
35.5	800	36.0	810	36.5	820
36.0	810	36.5	820	37.0	830
36.5	820	37.0	830	37.5	840
37.0	830	37.5	840	38.0	850
37.5	840	38.0	850	38.5	860
38.0	850	38.5	860	39.0	870
38.5	860	39.0	870	39.5	880
39.0	870	39.5	880	40.0	890
39.5	880	40.0	890	40.5	900
40.0	890	40.5	900	41.0	910
40.5	900	41.0	910	41.5	920
41.0	910	41.5	920	42.0	930
41.5	920	42.0	930	42.5	940
42.0	930	42.5	940	43.0	950
42.5	940	43.0	950	43.5	960
43.0	950	43.5	960	44.0	970
43.5	960	44.0	970	44.5	980
44.0	970	44.5	980	45.0	990
44.5	980	45.0	990	45.5	1000
45.0	990	45.5	1000	46.0	1010
45.5	1000	46.0	1020	46.5	1030
46.0	1010	46.5	1040	47.0	1050
46.5	1020	47.0	1060	47.5	1070
47.0	1030	47.5	1080	48.0	1090
47.5	1040	48.0	1100	48.5	1110
48.0	1050	48.5	1120	49.0	1130
48.5	1060	49.0	1140	49.5	1150
49.0	1070	49.5	1160	50.0	1170
49.5	1080	50.0	1180	50.5	1190
50.0	1090	50.5	1200	51.0	1210
50.5	1100	51.0	1220	51.5	1230
51.0	1110	51.5	1240	52.0	1250
51.5	1120	52.0	1260	52.5	1270
52.0	1130	52.5	1280	53.0	1290
52.5	1140	53.0	1300	53.5	1310
53.0	1150	53.5	1320	54.0	1330
53.5	1160	54.0	1340	54.5	1350
54.0	1170	54.5	1360	55.0	1370
54.5	1180	55.0	1380	55.5	1390
55.0	1190	55.5	1400	56.0	1410
55.5	1200	56.0	1420	56.5	1430
56.0	1210	56.5	1440	57.0	1450
56.5	1220	57.0	1460	57.5	1470
57.0	1230	57.5	1480	58.0	1490
57.5	1240	58.0	1500	58.5	1510
58.0	1250	58.5	1520	59.0	1530
58.5	1260	59.0	1540	59.5	1550
59.0	1270	59.5	1560	60.0	1570
59.5	1280	60.0	1580	60.5	1590
60.0	1290	60.5	1600	61.0	1610
60.5	1300	61.0	1620	61.5	1630
61.0	1310	61.5	1640	62.0	1650
61.5	1320	62.0	1660	62.5	1670
62.0	1330	62.5	1680	63.0	1690
62.5	1340	63.0	1700	63.5	1710
63.0	1350	63.5	1720	64.0	1730
63.5	1360	64.0	1740	64.5	1750
64.0	1370	64.5	1760	65.0	1770
64.5	1380	65.0	1780	65.5	1790
65.0	1390	65.5	1800	66.0	1810
65.5	1400	66.0	1820	66.5	1830
66.0	1410	66.5	1840	67.0	1850
66.5	1420	67.0	1860	67.5	1870
67.0	1430	67.5	1880	68.0	1890
67.5	1440	68.0	1900	68.5	1910
68.0	1450	68.5	1920	69.0	1930
68.5	1460	69.0	1940	69.5	1950
69.0	1470	69.5	1960	70.0	1970
69.5	1480	70.0	1980	70.5	1990
70.0	1490	70.5	2000	71.0	2010
70.5	1500	71.0	2020	71.5	2030
71.0	1510	71.5	2040	72.0	2050
71.5	1520	72.0	2060	72.5	2070
72.0	1530	72.5	2080	73.0	2090
72.5	1540	73.0	2100	73.5	2110
73.0	1550	73.5	2120	74.0	2130
73.5	1560	74.0	2140	74.5	2150
74.0	1570	74.5	2160	75.0	2170
74.5	1580	75.0	2180	75.5	2190
75.0	1590	75.5	2200	76.0	2210
75.5	1600	76.0	2220	76.5	2230
76.0	1610	76.5	2240	77.0	2250
76.5	1620	77.0	2260	77.5	2270
77.0	1630	77.5	2280	78.0	2290
77.5	1640	78.0	2300	78.5	2310
78.0	1650	78.5	2320	79.0	2330
78.5	1660	79.0	2340	79.5	2350
79.0	1670	79.5	2360	80.0	2370
79.5	1680	80.0	2380	80.5	2390
80.0	1690	80.5	2400	81.0	2410
80.5	1700	81.0	2420	81.5	2430
81.0	1710	81.5	2440	82.0	2450
81.5	1720	82.0	2460	82.5	2470
82.0	1730	82.5	2480	83.0	2490
82.5	1740	83.0	2500	83.5	2510
83.0	1750	83.5	2520	84.0	2530
83.5	1760	84.0	2540	84.5	2550
84.0	1770	84.5	2560	85.0	2570
84.5	1780	85.0	2580	85.5	2590
85.0	1790	85.5	2600	86.0	2610
85.5	1800	86.0	2620	86.5	2630
86.0	1810	86.5	2640	87.0	2650
86.5	1820	87.0	2660	87.5	2670
87.0	1830	87.5	2680	88.0	2690
87.5	1840	88.0	2700	88.5	2710
88.0	1850	88.5	2720	89.0	2730
88.5	1860	89.0	2740	89.5	2750
89.0	1870	89.5	2760	90.0	2770
89.5	1880	90.0	2780	90.5	2790
90.0	1890	90.5	2800	91.0	2810
90.5	1900	91.0	2820	91.5	2830
91.0	1910	91.5	2840	92.0	2850
91.5	1920	92.0	2860	92.5	2870
92.0	1930	92.5	2880	93.0	2890
92.5	1940	93.0	2900	93.5	2910
93.0	1950	93.5	2920	94.0	2930
93.5</					

Table VI shows a mean gain of 5.08 for the group reading material that was three to seven months too easy. A difference of .37 is in favor of the Adjusted group.

TABLE VI
MEAN GAIN IN RELATION TO EASY AND ADJUSTED MATERIAL

Difficulty of Selection	No.	Mean Gain	S.D.	S.E. M.	Diff.	S.E. Diff.	C.R.
Adjusted	55	5.45	3.31	.446			
					.37	.57	.644
3 to 7 months too easy	90	5.08	3.43	.361			

The Critical Ratio of .644 shows no statistical significance to these results.

THE UNIVERSITY OF CHICAGO

DEPARTMENT OF CHEMISTRY
5800 S. UNIVERSITY AVENUE
CHICAGO, ILLINOIS 60637

1962

RECEIVED

DATE	DESCRIPTION	AMOUNT
1/15/62
1/22/62
1/29/62
2/5/62
2/12/62
2/19/62
2/26/62
3/5/62
3/12/62
3/19/62
3/26/62
4/2/62
4/9/62
4/16/62
4/23/62
4/30/62
5/7/62
5/14/62
5/21/62
5/28/62
6/4/62
6/11/62
6/18/62
6/25/62
7/2/62
7/9/62
7/16/62
7/23/62
7/30/62
8/6/62
8/13/62
8/20/62
8/27/62
9/3/62
9/10/62
9/17/62
9/24/62
10/1/62
10/8/62
10/15/62
10/22/62
10/29/62
11/5/62
11/12/62
11/19/62
11/26/62
12/3/62
12/10/62
12/17/62
12/24/62
12/31/62

TOTAL ...

Table VII shows a mean gain of 4.15 for the group reading material that was eight to twelve months too easy. A difference of 1.30 shows a positive relationship in favor of the Adjusted group.

TABLE VII
MEAN GAIN IN RELATION TO EASY AND ADJUSTED MATERIAL

Difficulty of Selection	No.	Mean Gain	S.D.	S.E. M.	Diff.	S.E. Diff.	C.R.
Adjusted	55	5.45	3.31	.446			
					1.30	.76	1.71
8 to 12 months too easy	47	4.15	4.17	.608			

The Critical Ratio of 1.71 indicates no statistical significance.

1. The first part of the document is a letter from the Secretary of the Department of the Interior to the Secretary of the Department of the Army, dated August 1, 1944. The letter discusses the proposed construction of a dam on the Colorado River and the need for a license from the Army for the project.

2. The second part of the document is a letter from the Secretary of the Army to the Secretary of the Interior, dated August 1, 1944. This letter responds to the first letter and discusses the Army's position on the proposed dam project.

3. The third part of the document is a letter from the Secretary of the Interior to the Secretary of the Army, dated August 1, 1944. This letter discusses the Interior Department's concerns regarding the proposed dam project and the need for a license from the Army.

Date	From	To	Subject
Aug 1, 1944	Secretary of the Interior	Secretary of the Army	Proposed construction of a dam on the Colorado River and the need for a license from the Army for the project.
Aug 1, 1944	Secretary of the Army	Secretary of the Interior	Response to the first letter and discussion of the Army's position on the proposed dam project.
Aug 1, 1944	Secretary of the Interior	Secretary of the Army	Discussion of the Interior Department's concerns regarding the proposed dam project and the need for a license from the Army.

4. The fourth part of the document is a letter from the Secretary of the Army to the Secretary of the Interior, dated August 1, 1944. This letter discusses the Army's position on the proposed dam project and the need for a license from the Army.

Table VIII shows a mean gain of 2.75 for the group reading material that was thirteen to seventeen months too easy. A difference of 2.70 shows a positive relationship in favor of the Adjusted group.

TABLE VIII
MEAN GAIN IN RELATION TO EASY AND ADJUSTED MATERIAL

Difficulty of Selection	No.	Mean Gain	S.D.	S.E. M.	Diff.	S.E. Diff.	C.R.
Adjusted	55	5.45	3.31	.446			
					2.70	.70	3.857
13 to 17 months too easy	36	2.75	3.25	.54			

The Critical Ratio of 3.857 shows that these results are statistically significant.

... ..
... ..
... ..

... ..

... ..

... ..

... ..

... ..

Table IX shows a mean gain of 2.14 for the group reading material that was eighteen months or more too easy. A difference of 3.31 shows a positive relationship in favor of the Adjusted group.

TABLE IX
MEAN GAIN IN RELATION TO EASY AND ADJUSTED MATERIAL

Difficulty of Selection	No.	Mean Gain	S.D.	S.E. M.	Diff.	S.E. Diff.	C.R.
Adjusted	55	5.45	3.31	.446			
					3.31	1.18	2.884
18 months or more too easy	7	2.14	2.90	1.095			

The Critical Ratio of 2.884 attaches a statistical significance to these results, even though a small number of cases is represented.

Table X summarizes the results of the foregoing tables. The highest mean gain was for the Adjusted group, being 5.45 months. All comparisons show positive relationships in favor of this group.

THE UNIVERSITY OF CHICAGO
DEPARTMENT OF CHEMISTRY
5408 SOUTH DIVISION STREET
CHICAGO, ILLINOIS 60637

MEMORANDUM

TO : [Name]

DATE	INITIALS	DESCRIPTION
10/15/54	[Initials]	[Description]
10/16/54	[Initials]	[Description]
10/17/54	[Initials]	[Description]
10/18/54	[Initials]	[Description]
10/19/54	[Initials]	[Description]
10/20/54	[Initials]	[Description]
10/21/54	[Initials]	[Description]
10/22/54	[Initials]	[Description]
10/23/54	[Initials]	[Description]
10/24/54	[Initials]	[Description]
10/25/54	[Initials]	[Description]
10/26/54	[Initials]	[Description]
10/27/54	[Initials]	[Description]
10/28/54	[Initials]	[Description]
10/29/54	[Initials]	[Description]
10/30/54	[Initials]	[Description]
10/31/54	[Initials]	[Description]

RE: [Subject]

[Detailed text of the memorandum, including observations, results, and conclusions.]

TABLE X: MASTER TABLE:
 MEAN GAIN IN RELATION TO HARD, EASY
 AND ADJUSTED MATERIAL

Relative difficulty of selections	No.	Mean Gain	S.D.	S.E. M.	Diff. from Adj.	S.E. Diff.	C.R.
8 months or more too hard	14	3.71	2.28	.603	1.74	.75	2.32
3 to 7 months too hard	57	3.51	2.56	.339	1.94	.56	3.50
Adjusted	55	5.45	3.31	.446			
3 to 7 months too easy	90	5.08	3.43	.361	.37	.57	.644
8 to 12 months too easy	47	4.15	4.17	.608	1.30	.76	1.71
13 to 17 months too easy	36	2.75	3.25	.54	2.70	.70	3.857
18 months or more too easy	7	2.14	2.90	1.095	3.31	1.18	2.884
N = 306							

An examination of Table X reveals that the Critical Ratios for the following groups indicate statistical significance: the group reading material three to seven months too hard; the group reading material thirteen to seventeen months too easy; and the group reading material eighteen months or more too easy.

THE UNIVERSITY OF CHICAGO

DEPARTMENT OF CHEMISTRY

RESEARCH REPORT

NO. 1000

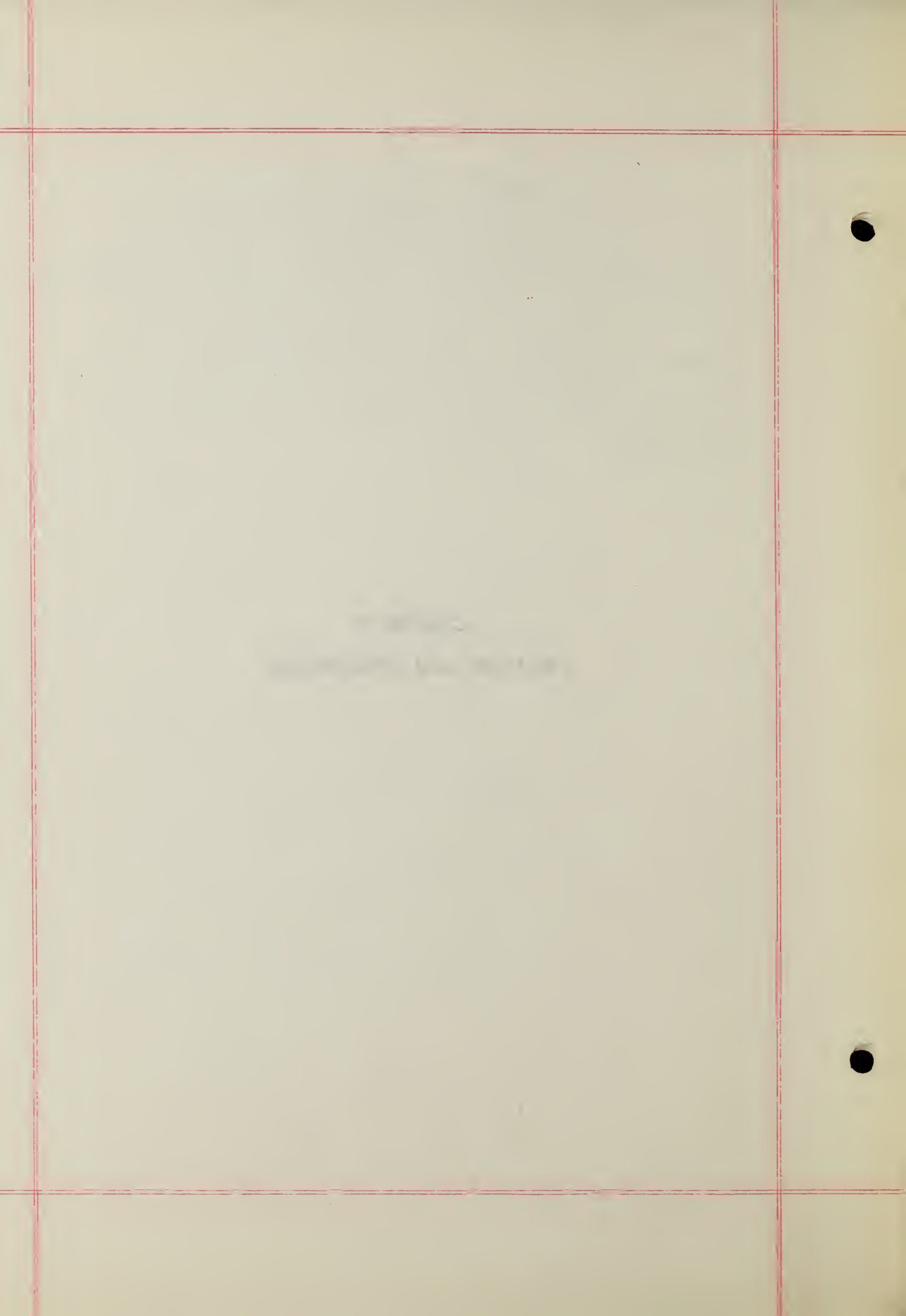
BY

DR. J. H. GOLDSTEIN

1954

CHAPTER V

SUMMARY AND CONCLUSIONS



CHAPTER V

SUMMARY AND CONCLUSIONS

The purpose of this investigation was to determine the effect of adjusted basal materials, upon reading achievement in grades two and three.

In general, it was found that children who are reading material adjusted to their ability, or from three to seven months below their level, make the greatest gain in reading achievement.

Specific conclusions were the following:

1. When the basal material was eight months or more too hard, the mean gains were in favor of the Adjusted group to the extent of 1.74 months. The Critical Ratio of this difference was 2.32, which is not statistically significant, probably due to the small number of cases in the experimental group.
2. When the basal material was three to seven months too hard, the difference between the mean gains was 1.94, in favor of the Adjusted group. The Critical Ratio of 3.50 is statistically significant.

3. When the basal material was three to seven months too easy, the difference was only .37 in favor of the Adjusted group, with a Critical Ratio of .64 which is not significant.
4. When the basal material was eight to twelve months too easy, the difference was 1.30 in favor of the Adjusted group. The Critical Ratio of 1.70 is not statistically significant.
5. When the basal material was thirteen to seventeen months too easy, the difference was 2.70 in favor of the Adjusted group. The Critical Ratio of 3.85 is statistically significant.
6. When the basal material was eighteen months or more too hard, the difference was 3.31 in favor of the Adjusted group. The Critical Ratio of 2.88 is statistically significant.

The first part of the document is a letter from the Secretary of the State to the Governor, dated the 10th of January, 1862. It contains a report on the state of the treasury and the public debt, and a statement of the receipts and disbursements of the State for the year 1861.

The second part of the document is a report on the state of the treasury and the public debt, and a statement of the receipts and disbursements of the State for the year 1861. It is dated the 10th of January, 1862.

The third part of the document is a report on the state of the treasury and the public debt, and a statement of the receipts and disbursements of the State for the year 1861. It is dated the 10th of January, 1862.

The fourth part of the document is a report on the state of the treasury and the public debt, and a statement of the receipts and disbursements of the State for the year 1861. It is dated the 10th of January, 1862.

The fifth part of the document is a report on the state of the treasury and the public debt, and a statement of the receipts and disbursements of the State for the year 1861. It is dated the 10th of January, 1862.

CHAPTER VI

SUGGESTIONS FOR FURTHER RESEARCH



CHAPTER VI

SUGGESTIONS FOR FURTHER RESEARCH

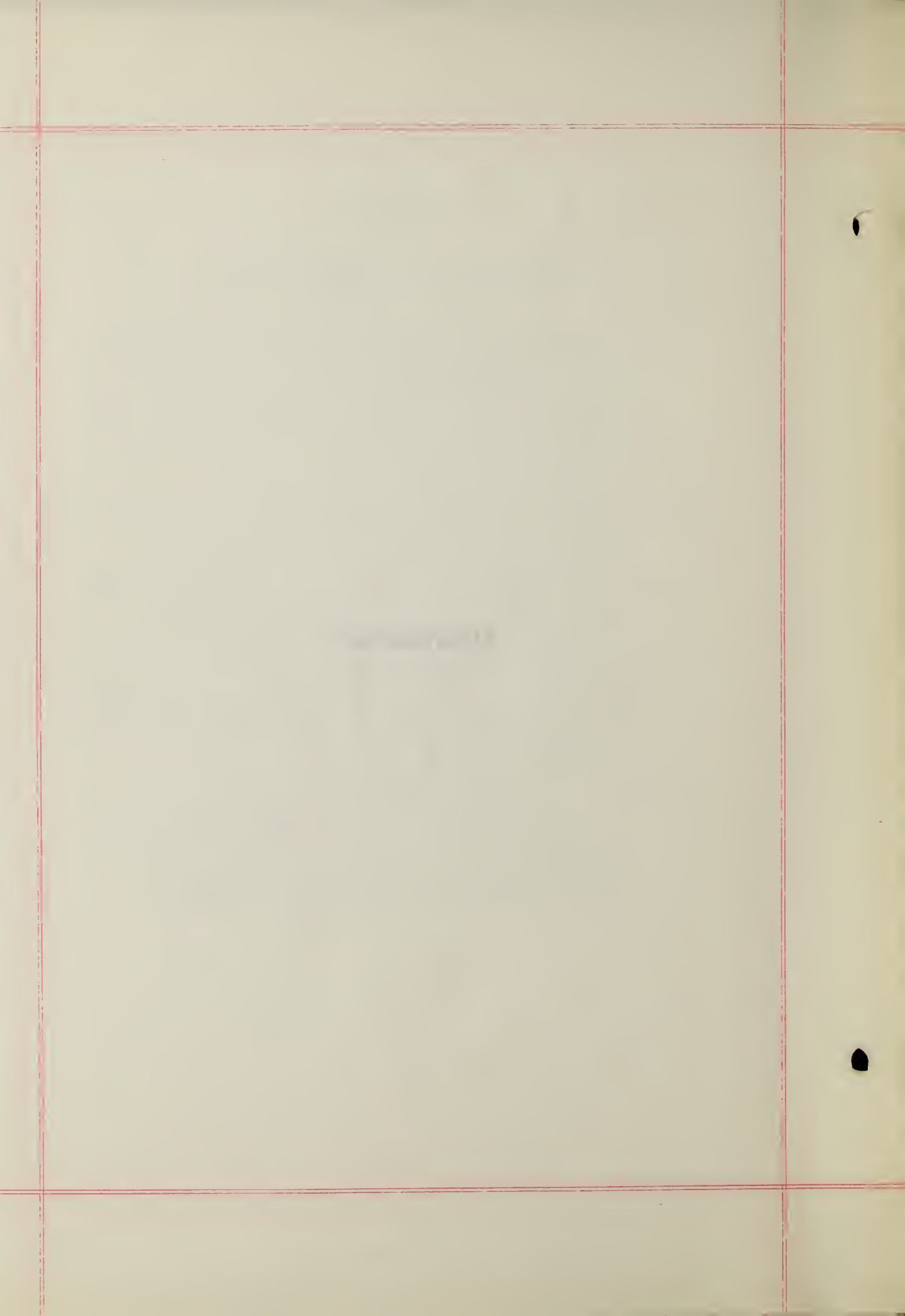
1. A similar study should be made with children from higher grade levels. A wider range of ability and of adjustment might produce even more significant results.
2. A means of determining suitability of material should be obtained. The suitability of materials other than the basal texts could be rated and a comparison made of gains.
3. An attempt to determine the relationships that exist between adjustment of material and gains according to intelligence.
4. An investigation covering a longer period of time, with more than one check on the suitability of material at various intervals.

CHAPTER I

THE HISTORY OF THE UNITED STATES

The history of the United States is a story of growth and expansion. It begins with the first European settlers in the early 17th century, who established colonies along the Atlantic coast. These colonies grew into a nation that would eventually span across a vast continent. The story is one of struggle and triumph, of a people who fought for their freedom and built a new society. The early years were marked by conflict with Native Americans and the British, leading to the American Revolution. The new nation then faced the challenge of unifying a diverse set of states and territories. The westward expansion of the 19th century brought new challenges and opportunities, leading to the Civil War. The 20th century saw the United States emerge as a global superpower, playing a central role in the world's affairs. The story continues to unfold, as the nation faces new challenges in the 21st century.

BIBLIOGRAPHY



BIBLIOGRAPHY

- Barr, A. S., William H. Burton, and Leo J. Brueckner, Supervision. New York: D. Appleton-Century Company, 1938.
- Beal, Alice Burton, "An Evaluation of Techniques for Determining the Difficulty of Primary Grade Reading." Unpublished Ed. M. thesis, Boston University School of Education, 1937.
- Betts, Emmett A., "Corrective and Remedial Cases," Visual Digest, Vol. II, No. 4, Spring, 1947. Pp. 36-44.
- _____, "Differentiated Instruction in Reading Activities," American School Board Journal, Vol. 100, No. 5, May and June, 1940. Pp. 29-30, 108, 27-29.
- _____, Foundations of Reading Instruction. New York: American Book Company, 1946.
- Boney, C. DeWitt, "Basal Readers," Elementary English Review, Vol. 15, No. 4, April, 1938. Pp. 133-37.
- Caswell, Hollis L., Education in the Elementary School. New York: American Book Company, 1942.
- Cole, Luella, The Improvement of Reading. New York: Farrar and Rinehart, Inc., 1938.
- Daniels, Katharine H., "An Evaluation of Certain Informal Tests." Unpublished Ed. M. thesis, Boston University School of Education, 1940.
- De Long, Vaughn R., "Primary Promotion by Reading Levels," Elementary School Journal, 38:663-71, May, 1938.
- Dolch, Edward W., Teaching Primary Reading. Champaign, Illinois: The Garrard Press, 1941.

Introduction

The purpose of this study is to investigate the effects of the proposed changes on the system's performance.

The study is organized as follows: Chapter 2 describes the system architecture and the proposed changes. Chapter 3 presents the experimental setup and the results of the performance tests.

Chapter 4 discusses the implications of the results and the conclusions drawn from the study. Finally, Chapter 5 provides a summary of the work and suggests directions for future research.

The following sections provide a detailed description of the system and the proposed changes, including the methodology used for the performance evaluation.

The system architecture is based on a modular design, allowing for the integration of new components and the replacement of existing ones.

The proposed changes include the addition of a new data processing module and the optimization of the existing modules to improve the system's overall efficiency.

The performance tests were conducted under various load conditions to evaluate the system's response time and throughput.

The results of the tests show that the proposed changes significantly improve the system's performance, particularly in terms of response time and throughput.

The implications of these results are discussed in detail, highlighting the benefits of the proposed changes and the potential for further optimization.

The conclusions drawn from the study are that the proposed changes are effective in improving the system's performance and that the modular design is a viable approach for system development.

The work presented in this study is a preliminary investigation and further research is needed to fully understand the long-term effects of the proposed changes.

- Duffy, Gertrude B., "A Diagnostic Study of Reading Difficulties in Third Grade." Unpublished Ed. M. thesis, Boston University School of Education, 1934. Published in part in Education, 56:37-40, September, 1935.
- Dunklin, Howard T., "The Prevention of Failure in First Grade Reading by Means of Adjusted Instruction," Contributions to Education no. 802. Teachers College, Columbia University, 1935.
- Durrell, Donald D., Improvement of Basic Reading Abilities. Yonkers-on-Hudson, New York: World Book Company, 1940.
- Gates, Arthur I., "General Recommendations Concerning Programs for Evaluating Achievement in Reading," (The Teaching of Reading: A Second Report), Thirty-Sixth Yearbook of the National Society for the Study of Education, Part I. Bloomington, Illinois: Public School Publishing Company, 1937. Pp. 359-88.
- Gould, Charlotte E., "A Survey of Oral Reading Errors and Suitability of Instructional Materials in Grades Two and Three." Unpublished Ed. M. thesis, Boston University School of Education, 1942.
- Harris, Albert J., How to Increase Reading Ability. New York: Longmans, Green and Company, 1940.
- Hildreth, Gertrude, "Individualizing Reading Instruction," Teachers College Record, 42:123-37, November, 1940.
- Killgallon, P. A., "A Study of Relationships among Certain Pupil Adjustments in Reading Situations." Unpublished Doctor's dissertation, Pennsylvania State College, 1942.
- Kvaraceus, William C., and Marion E. Wiles, "An Experiment in Grouping for Effective Learning," Elementary School Journal, 38:264-68, December, 1938.

THE UNIVERSITY OF CHICAGO
DEPARTMENT OF CHEMISTRY
530 SOUTH EAST ASIAN AVENUE
CHICAGO, ILLINOIS 60607

RECEIVED
JAN 15 1964

TO THE DIRECTOR
FROM THE DEPARTMENT OF CHEMISTRY

RE: [Illegible text]

[Illegible text]

[Illegible text]

[Illegible text]

[Illegible text]

[Illegible text]

MacLatchy, Josephine H., "The Administrator's Responsibility," Educational Research Bulletin, 20:147-52, September, 1941.

McCallister, James M., Remedial and Constructive Instruction in Reading. New York: D. Appleton-Century Company, 1936.

Milazzo, Marjorie T., "The Effect of Adjusted Basal Materials on Achievement in Grades Two and Three." Unpublished Ed. M. thesis, Boston University, School of Education, 1946.

Mills, Frederick C., Statistical Methods (Revised). New York: Henry Holt and Company, 1938.

Smith, Nila Banton, American Reading Instruction. New York: Silver, Burdett and Company.

Wheat, Leonard B., "The Flexible Progress Group System," Elementary School Journal, 38:175-83, November, 1937.

Wheelock, Elsie K., "A Survey of Specific Reading Skills in a Single Elementary School as a Basis for Building a More Effective Reading Program." Unpublished Ed. M. thesis, Boston University School of Education, 1942.

Whitehead, John Andrews, "An Analysis of the Ability of Intermediate Grade Pupils to Understand and Interpret Three Basic Textbooks." Unpublished Ed. M. thesis, Boston University School of Education, 1942.

1. The first part of the document is a letter from the Secretary of the State to the President of the United States, dated January 1, 1865.

2. The second part is a report on the condition of the State, prepared by the Governor, dated January 1, 1865.

3. The third part is a report on the condition of the State, prepared by the Governor, dated January 1, 1865.

4. The fourth part is a report on the condition of the State, prepared by the Governor, dated January 1, 1865.

5. The fifth part is a report on the condition of the State, prepared by the Governor, dated January 1, 1865.

6. The sixth part is a report on the condition of the State, prepared by the Governor, dated January 1, 1865.

7. The seventh part is a report on the condition of the State, prepared by the Governor, dated January 1, 1865.

8. The eighth part is a report on the condition of the State, prepared by the Governor, dated January 1, 1865.

APPENDIX
BOOKS USED IN INFORMAL TEST

THE UNIVERSITY OF CHICAGO
LIBRARY

APPENDIX

BOOKS USED IN INFORMAL TEST

1. Friends and Neighbors - second reader I
2. More Friends and Neighbors - second reader II
3. Streets and Roads - third reader I
4. More Streets and Roads - third reader II
A Revision of the Elson-Gray Basic Readers.
New York: Scott-Foresman, 1941.
5. Rain and Shine - Primer II
Reading for Interest Series. Boston: D. C.
Heath, Company, 1942.
6. The Ranch Book - primer
Core - Vocabulary Readers. New York: Mac-
millan Company, 1943.
7. In City and Country - first reader
Unit - Activity Reading Series. New York:
Silver-Burdett Company, 1940.
8. Stories We Like - second reader
The Laidlaw Basic Readers. New York: Laidlaw
Bros., Inc., 1940.

Table

1. The first part of the table

2. The second part of the table

3. The third part of the table

4. The fourth part of the table

5. The fifth part of the table

6. The sixth part of the table

7. The seventh part of the table

8. The eighth part of the table

9. The ninth part of the table

10. The tenth part of the table

11. The eleventh part of the table

12. The twelfth part of the table

13. The thirteenth part of the table

14. The fourteenth part of the table

15. The fifteenth part of the table

16. The sixteenth part of the table

17. The seventeenth part of the table

18. The eighteenth part of the table

19. The nineteenth part of the table

9. Tip - supplementary first reader
10. We Grow Up - second reader
11. Wide Wings - third reader

The New Work - Play Books. New York: Macmillan Company, 1939.

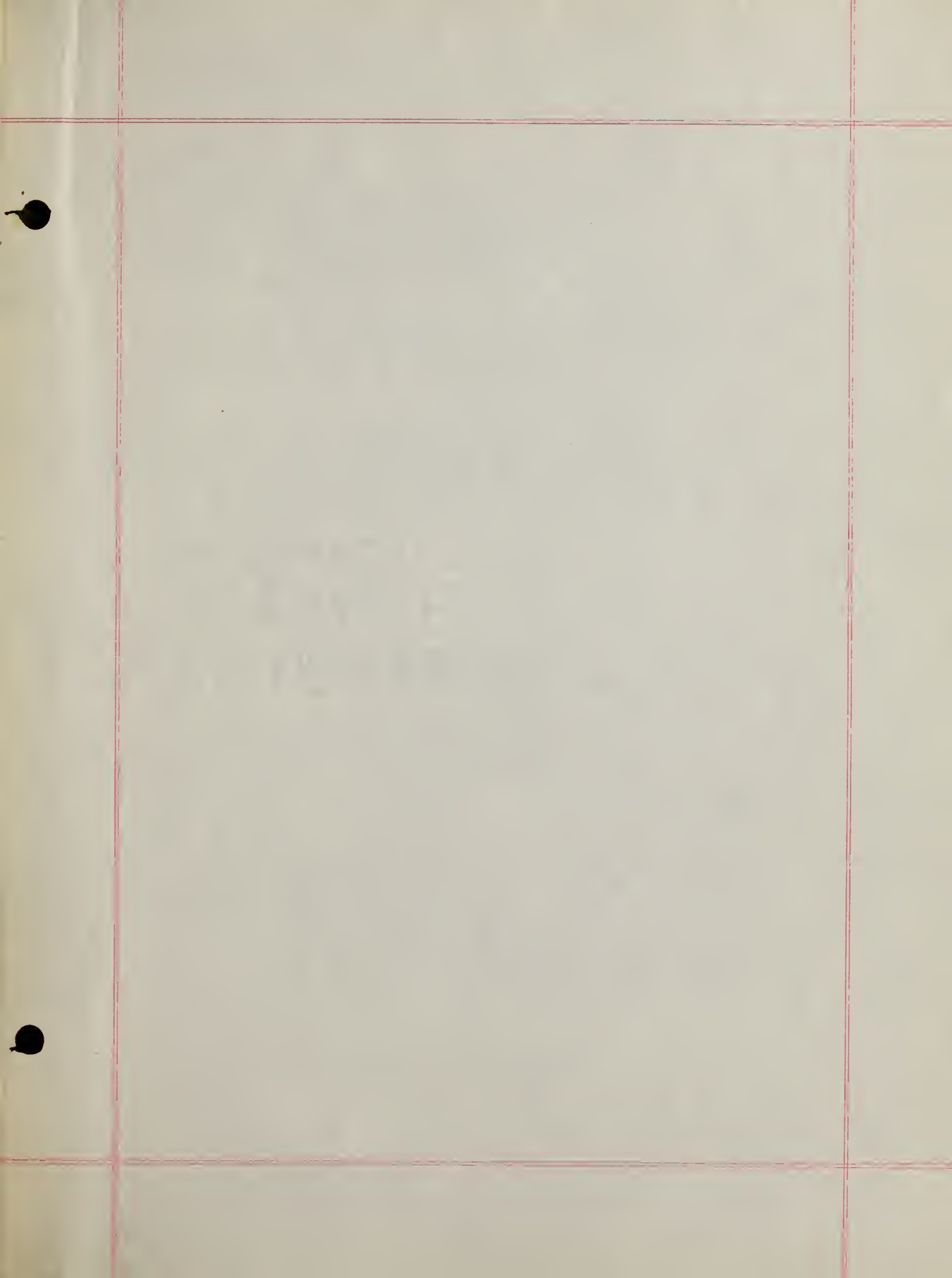
1. The first part of the document is a list of names.

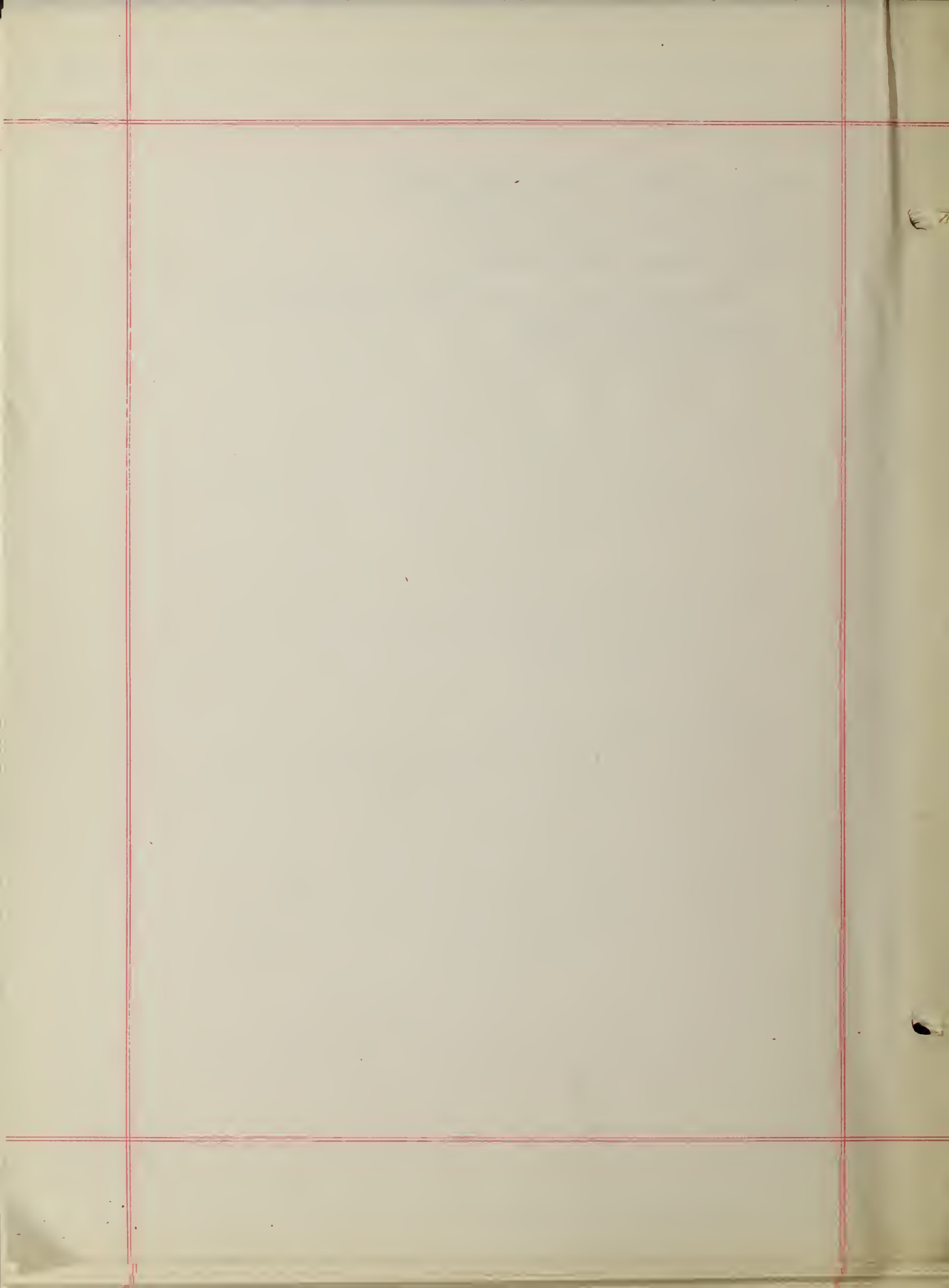
2. The second part is a list of dates.

3. The third part is a list of places.

4. The fourth part is a list of events.

5. The fifth part is a list of people.





BOSTON UNIVERSITY



1 1719 02552 3566



ACCOPRESS BINDER

BE 50-77

MADE IN
RINGIER PRODUCTS, INC.
1000 BROADWAY, NEW YORK, N.Y.

