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D A T A F O R G U I D A N C E

by

DAVID H. REID

A Problem Submitted in Partial Fulfillment
of the Requirements for the Master of
Science Degree

Massachusetts State College

1941

T A B L E
O F
C O N T E N T S

T A B L E O F C O N T E N T S

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THE INTRODUCTION

C H A P T E R I

INTRODUCTION

The need for guidance in education is apparent at all levels but is probably most acute at the end of the exploratory period of the Junior High School years and during the first year of High School. At this time the individual faces the divergent pathways of education created to look after individual differences. Decisions must be made which involve choices between specialized secondary schools, between courses within a comprehensive high school or courses within a specialized school or department.

It is necessary for the pupil to know something about the educational offerings ahead and it is most necessary for the school to know something about the ability and achievements of the pupil. The school must also know what degree of ability and what achievements are necessary for a pupil to pursue a given course with at least fair assurance of success.

This study is concerned with the establishment of data for the guidance of pupils in their choice of courses within a Commercial High School, and is a part of the program of curriculum development at the High School of Commerce, Springfield, Massachusetts. This program is directed by a Steering

Committee composed of the two principals and three teachers and is carried on by committees to cover the following phases of education:

1. The Core Learnings
2. The English Learnings
3. The Social Studies
4. The Mathematical Learnings
5. Biological Science
6. Practical Arts
7. Fine Arts
8. General Business Course
9. Stenographic Course
10. Bookkeeping Course
11. Marking
12. Guidance

Some of the data used in this study have also been applied to other problems. The results of this study are of greatest significance in the matter of guidance, however evidence established by this study is of value in other fields.

STATEMENT OF PROBLEM

AND

METHOD OF PROCEDURE

C H A P T E R I I

STATEMENT OF THE PROBLEM AND METHOD OF PROCEDURE

This chapter deals with an exact statement of the problem and an outline of the procedure followed.

1. Statement of Problem: The problem involved the following:
 - a) The introduction and administration of a testing program to measure the qualifications of pupils for the office occupations for which training is given.
 - b) The study of the successful candidates for the occupational tests in terms of intelligence quotients and grade placement scores made on a battery of achievement tests.
 - c) Study of the grade placement scores on a battery of achievement tests made by all the members of the XII A class, the stenographic course group of the XII A class, the book-keeping course group of the XII A class, and the members of the IX A class about to enter the High School of Commerce.

2. The City of Springfield, Massachusetts: The city of Springfield, in which this study was made, has a population of approximately 150,000 but is the trading center for about 300,000 people. Leading employers are engaged in the manufacture of electrical goods, chemicals, paper products, motorcycles, forged products, and matches. A large number are also employed at the United States Armory. Although predominantly industrial it has a substantial amount of business activity.
3. The School System of Springfield: The public school system of Springfield is on the six-three-three plan and is marked by the specialized and centralized nature of the secondary schools. The Classical High School, Technical High School and the High School of Commerce are located in the center of the city. The new Trade School is also located as centrally as possible. Although a change is in operation the high schools are still on the semester basis.

This study is concerned with the High School of Commerce, which has an enrollment of 1900. The nature of this school may be learned from the outline of curricula (courses). The college preparatory group represents about five per cent of the enrollment; all others follow one of the programs on the outline.

H I G H S C H O O L O F C O M M E R C E

Outline of Curriculums 2--3--4--5

	X A	X I B	X I A	X I I B	X I I A	Required for Graduation
Subjects--Pts.	Subjects--Pts.	Subjects--Pts.	Subjects--Pts.	Subjects--Pts.	Subjects--Pts.	
Basic subjects English 1	English 1	English 1	English 1	English 1	English 1	All basic
for curriculums W. Hist. 1	Am. Hist. 1	Am. Hist. 1	Economics 1	Bus. Law 1	Bus. Law 1	subjects
2--3--4--5 H. Eco.(G) 1/2	Gym 1/2	Gym 1/2	Off. Rout. 1	Eco. II(B) 1	Eco. II(B) 1	
Gym 1/2	Gym 1/2			H. Man.(G) 1	H. Man.(G) 1	
Vocational Book'g. 1	Book'g. 1	Book'g. 1	Accounting 1	Off. App.(2) 1/2	Off. App.(2) 1/2	Book'g. and
subjects cur- Pen.						Accounting 6
riculum #2 (Accounting)						semesters.**
Vocational Book'g. 1	Stenog. 1	Stenog. 1	Stenog. 1	Stenog. 1	Stenog. 1	Book'g. 2 sem.
subjects cur- Pen. 1/2	Type 1/2	Type 1/2	Type 1/2	Type 1/2	Type 1/2	Stenog. 4 sem.
riculum #3 (Stenographic)						Type 5 sem.**
Vocational Book'g. 1	Arith. 1	Arith. 1	Sales 1	Sales (G) 1	Sales (G) 1	Sales etc. 3
subjects cur- Pen. 1/2	Physics (B) 1/2	Physics (B) 1/2	Eco. Geog. 1	Adver.(B) 1	Marketing(B) 1	Physics(B) 2
riculum #4 (Salesmanship)				Store Work*1	Store Work*1	Bus. Prin. 1
Special Book'g. 1	Bus. Prin 1	Bus. Prin 1	Filing 1/2	Off. App. 1/2		Eco. Geog. 1
subjects of Pen. 1/2	Arith 1	Arith 1				All subjects
curriculum #5 (Clerical)						specified and
	(B)--Boys	(G)--Girls				2 semesters of
						a science

*--Places for a few pupils only on part-time basis. Sometimes substituted for Off. Routine.

4. Subjects and Materials Used: The subjects used in the study were the 356 members of the 1940 XII A class of the High School of Commerce and the 333 members of the 1940 IX A classes of the junior high schools who elected to come to the High School of Commerce in September 1941.

The materials used were the results of the achievement tests given to the subjects in May 1940 under the direction of the Assistant Superintendent of Schools. The tests used were the Progressive Achievement Tests. The Advanced Battery was used for the XII A class and the Intermediate Battery for the IX A pupils.

The National Clerical Ability Tests were used to obtain a group of subjects from the XII A class who were qualified for the office occupations for which they had trained. Teachers' marks were also considered.

Intelligence quotients were obtained by the Henmon-Nelson Test.

5. Method of Procedure:

- a) A table was prepared showing the intelligence quotients, composite grade placements and English composite scores of the pupils who were certified for stenographic occupation by the clerical ability test.

A similar table was prepared for the pupils certified for the bookkeeping occupation, except the English composite score was not considered.

- b) Tables were prepared showing the Q1, Median, and Q3 of the intelligence quotients and composite grade placements of the pupils in each group of the XII A class, namely stenographic, bookkeeping, sales, and clerical.
- c) The Q1, Median, and Q3 of the composite grade placement scores of the XII A class were compared with the Q1, Median and Q3 of the composite grade placement scores of the incoming pupils.
- d) Generalizations and conclusions were reached through scrutiny of these tabulations.

The data from the procedures are found in Chapters III, IV, and V.

THE ADMINISTRATION
OF THE
NATIONAL CLERICAL ABILITY
TESTS

C H A P T E R I I I

THE ADMINISTRATION OF THE NATIONAL CLERICAL ABILITY TESTS

A brief report of each step in the administration of this testing program is presented here. This may be of interest to anyone who may be called upon to sponsor this program. It also may reveal to those who are not familiar with the organization of a large school, the many details that must be considered whenever any part of school routine is disturbed.

All the information concerning the tests may be found in Bulletin No. 1, a copy of which accompanies this report, together with copies and manuals of direction for the 1940 series of tests.

This testing program was instituted at the High School of Commerce for the following reasons:

1. To receive the values to be gained through the certification of pupils.
2. To establish closer working relationships with the employers of clerical help, especially the National Office Management Association.
3. To check the efficiency of the vocational courses and subjects offered at the school.
4. To obtain data for the establishment of standards of admission to the highly vocationalized courses.

- (1) Presentation of the Nature, Purpose, and Values of the Tests to the Faculty: The Tests were considered first by the principal and the acting department heads at a meeting during the fall term. The general idea of the tests was presented to the faculty meeting of the fall term. The presentation was too brief to convey the real values of the testing program.

A committee, including some teachers, might study the tests and explain the program at a faculty meeting. Copies of the various tests might be put on the teachers' bulletin board for inspection prior to the meeting.

The chairman of the committee for arrangements was appointed January 3, 1940.

- (2) The Selection of the Prospective Candidates: The records of the members of the XII B class were checked and a list prepared of the pupils who had approximately B averages or better in such general and fundamental subjects as English, History, and Arithmetic as well as in their major vocational subjects. The teachers of the

vocational subjects were supplied with copies of the 1939 series of tests so that they might become familiar with the nature and difficulty of the tests.

The candidates selected according to the office records were considered by their teachers of vocational subjects at meetings conducted by the principal and the acting department heads. Very few were struck off the list. Some pupils were recommended for two tests, a few for three.

This work was completed before the end of the semester.

(3) Presentation of the Nature, Purpose, and the Values of the Tests to the Prospective Candidates:

The most convenient time to meet the candidates was during the lower school assembly period, which they usually spend in their home rooms. This assured attendance and did not disrupt class work. Pupils were given advance notice of the purpose of the meeting and were advised regarding the tests for which they had been recommended.

The testing program was explained, including the cost, and each pupil was given a copy of the letter reproduced here:

Copy of Letter to Parents

To the parents of pupils approved by the faculty as candidates for the National Clerical Ability Tests:

The High School of Commerce is sponsoring the National Clerical Ability Tests which are prepared and directed by the National Office Management Association and the National Council of Business Education.

The tests cover:

- (1) General information
- (2) Fundamentals of grammar, arithmetic, spelling, vocabulary, etc.
- (3) Typing
- (4) Stenography
- (5) Bookkeeping
- (6) Machine Calculating

Each candidate takes sections (1) and (2) and the special test for which he is prepared. The tests are somewhat comparable to the College Board Examinations and afford our top ranking students an opportunity to be certified by a national organization. The total cost to the student for this service is \$1.35 plus a small charge for practice materials.

The tests were devised and introduced in 1937 and the High School of Commerce studied the success of the service before introducing it here.

The tests will be given May 13, 14, 15, and 16. The names of the successful candidates will be sent to the managers of local business offices which are members of the Association as soon as the results are announced.

If you wish your child to participate in the testing program please indicate your approval.

Sincerely,

Principal

Pupil _____ Home Room _____
Approved by parent _____

One week was set as the time limit for the return of the letter and the partial payment for the 1939 test for practice purposes. February 21 was set as the last day to complete payments so that registrations might reach the secretary before March 1, as directed by the Bulletin No. 1.

(4) Summary of Testees: Ninety per cent of the pupils recommended signed up to take tests.

Table I shows a summary of the testees according to their registration for the tests.

TABLE I

Showing a Summary of Testees
According to Their Registration for Tests

Tests	Boys	Girls	Total
Stenographic	2	42	44
Stenographic and Bookkeeping	0	4	4
Stenographic and Machine Calculating	0	1	1
Bookkeeping	9	8	17
Bookkeeping and Typewriting	1	2	3
Bookkeeping and Machine Calculating	0	1	1
Typewriting	1	11	12
Machine Calculating	2	7	9
	—	—	—
Total	15	76	91

Table I shows that the greatest number registered to take the Stenographic test alone. The second largest group took the Bookkeeping test alone and the third group took the Typewriting test along. Smaller groups registered for two tests such as Stenography and Bookkeeping or Bookkeeping and Machine Calculating.

(5) Summary of Tests: Table II shows the summary of the tests taken by the ninety-one candidates.

TABLE II

Showing a Summary of the Tests

Actually Taken

Tests	Boys	Girls	Total
Stenographic	2	47	49
Bookkeeping	10	15	25
Typewriting	2	13	15
Machine Calculating	2	9	11
	—	—	—
Total	16	84	100

Some of the pupils took two tests so that the figure showing the total exceeds the total figure in Table I.

(6) Distribution According to Curricula: All pupils must meet the requirements of one course for graduation. The distribution of the pupils is shown in Table III.

TABLE III

Showing the Distribution of the Pupils
of the XII A Class
According to Curricula (Courses)

Curriculum	Boys	Girls	Total	Per Cent
Business and College Preparatory	10	16	26	7.3
Bookkeeping	41	33	74	20.78
Stenographic	7	167	174	48.87
Salesmanship	14	34	48	13.48
Clerical	5	29	34	9.55
	—	—	—	
Total	77	279	356	

Table III shows that only seven per cent of the pupils are in the Business and College Preparatory course, with the others distributed as follows: Bookkeeping 21%, Stenography 49%, Salesmanship 13%, and Clerical 9%. The fact that seventy per cent of the pupils are in the most highly specialized courses, Bookkeeping and Stenography, is worthy of note.

The distribution of the testees according to the courses they followed is shown in Table IV.

TABLE IV

Showing the Distribution of Testees
According to Curricula (Courses)

Curriculum	Boys	Girls	Total
Stenographic	3	58	61
Bookkeeping	12	11	23
Others			7
			—
			91

Table IV shows, as would be expected, that the greatest number of candidates followed the Bookkeeping and Stenographic Courses. The low representation from the other courses is due to the following reasons: The Salesmanship Course does not prepare the pupils for any of the tests offered. The Clerical Course prepares the pupils only for the Machine Calculating Test. Most of the pupils following these courses are not in the upper levels in the matters of ability and achievement.

Figures from Table III and Table IV show that 35% of the pupils from the Stenographic Course and 31% of the pupils from the Bookkeeping course took tests.

- (7) Personality Rating Schedules: The teachers of the vocational subjects of the testees were given copies of the manual and personality rating schedules prior to a meeting at which the following points were decided:
- a) A uniform method of checking.
 - b) Schedules should be checked and submitted to the chairman April 15, May 15, and June 1.

After an examination of the schedules on April 15, it was decided to have the testees rated by their teachers of English and Social Studies also.

The Joint Committee decided to depart from its former scheme and decided not to include the personality score in the composite score in 1940. Thus it was not necessary to have the summaries completed by the examination date, May 16.

It was decided to record the personality record of each successful testee on the back of his certificate by the officer of the school at which he was prepared.

- (8) Presentation of the tests on General Information and Fundamentals to the Testees: The 1939 General Information Tests was presented to the testees orally at a meeting held during the lower school assembly period.

Samplings from the 1939 Test on Fundamentals were taken and mimeographed copies given to the testees. These were also available to all teachers.

- (9) Arrangements for Sessions for Practice: Committee: Principal, acting head of the stenographic department, and the chairman of the committee on arrangements.

The following is a copy of the schedule prepared. This was posted on the teachers' bulletin board. The teachers were consulted by their department heads and the pupils were notified by the chairman of the committee for arrangements.

Copy of

Schedule of Test Rehearsals for Pupils
Taking the National Clerical Ability Tests.

Stenographic--Total enrolled, 47 pupils

Saturday, April 6, 8:30 A. M.
Teachers: A and B

Saturday, May 11, 8:30 A. M.
Teachers: C and D

Rooms used: 311, 313B, 313A

Continued Copy of
Schedule of Test Rehearsals for Pupils
Taking the National Clerical Ability Tests.

Bookkeeping--Total enrolled, 24 pupils

Saturday, April 6, 8:30 A. M.
Teachers: E and F

Saturday, May 11, 8:30 A. M.
Teachers: G and H

Rooms used: 212 or 125

Typewriting--Total enrolled, 14 pupils

Saturday, April 13, 8:30 A. M.
Teachers: I and J

Saturday, April 20, 8:30 A. M.
Teachers: K and L

Rooms used: 313B and 313A

Machine Calculating--Total enrolled, 10 pupils

Saturday, April 13, 8:30 A. M.
Teacher: M

Saturday, May 11, 8:30 A. M.
Teacher: N

Room used: 215

The purpose in giving these trial tests is to remove nervousness, to acquaint pupils with the routine of the tests, thus reducing possible strain and confusion at the time of the real test. Work selected as the examination material should be as nearly similar to the sample tests as possible.

The trial tests should be corrected by the pupils themselves, if possible.

(10) Final Arrangements for the Tests: The Secretary-Treasurer of the Joint Committee presented the National Clerical Ability Tests at a meeting of the Connecticut Valley Commercial Education Association, March 16. It was agreed that any schools in this section wishing to use the testing service should send their candidates to the center at the High School of Commerce, Springfield, Massachusetts. The final date for registration was extended to May 1. Ludlow, West Springfield, and Agawam sent four, two, and eight candidates respectively. As soon as registrations were completed, the final arrangements were made.

Committee: Principal, Office Secretary, and the Chairman.

A copy of the bulletin regarding these arrangements is reproduced here. Testees were given copies of the schedule of examinations.

Copy of the Bulletin

The National Clerical Ability Tests will be given this week on Wednesday, Thursday, Friday, and Saturday according to the following schedule:

<u>Day</u>	<u>Subject</u>	<u>Room</u>	<u>Time</u>	<u>In Charge</u>
Wednesday	Office Machines	215	8:30-10:40	N
Thursday	General Informa- tion and Fundamentals	309 & 311		O
Friday	Stenographic	309	8:30- 9:30	P
	Transcription	312	9:30-10:40	R
	Typewriting	313A	8:30-10:40	K
A few transcription pupils will work in 313A.				
Saturday	Bookkeeping	125	8:30-11:40	J
				H

To clear these rooms for the examinations and care for the classes of teachers giving the examinations, will all teachers please note and follow the instructions below:

WEDNESDAY

<u>Subject</u>	<u>Room</u>	<u>In Charge</u>
Office Machines	215	N

<u>Class</u>	<u>Period</u>	<u>From</u>	<u>To</u>	<u>In Charge</u>
Office Appliance	1	215	216A	M
Office Appliance	2	215	220	S
Biology 1	1	302	302	R
Biology 2	3	302	302	P
Biology 1	4	302	302	T

THURSDAY

<u>Subject</u>	<u>Room</u>	<u>In Charge</u>
General Information	309	O
and Fundamentals Test	311	P

<u>Class</u>	<u>Period</u>	<u>From</u>	<u>To</u>	<u>In Charge</u>
Study	1	309	110	U
Study	1	309	Library	V
Study	1	311	115	W
Study	1	311	328	A
Biology 1	1	302	302	X
Economics 1	1	225	225	Y
Study	2	214B	311	Z
Study	2	311	Library	AA
Study	2	309	225	BB
Study	2	309	302	CC
Study	2	309	107	DD
Biology 2	2	302	302	N

Copy of the Bulletin
(con't)

<u>Class</u>	<u>Period</u>	<u>From</u>	<u>To</u>	<u>In Charge</u>
Study	3	309	118	EE
Study	3	309	222	FF
Study	3	309	220	C
Study	3	309	Library	GG
Study	3	311	104	HH
Study	3	311	326	II
Civics	3	225	225	JJ
Study	4	309	225	KK
Study	4	311	225	KK
Study	4	311	216B	LL
Chemistry 2	4	304	304	F
Library	4			T

FRIDAY

<u>Subject</u>	<u>Room</u>	<u>In Charge</u>
Stenographic Test	309	R
Transcription	312	K
Typewriting Test	313A	J

<u>Class</u>	<u>Period</u>	<u>From</u>	<u>To</u>	<u>In Charge</u>
Study	1	309	110	U
Study	1	309	Library	V
Typewriting	1	313A	317	K
Stenography	1	317	132	MM
Study	2	309	214B	Z
Study	2	309	225	BB
Study	2	309	231	NN
Typewriting	2	313A	318A	D
Typewriting	2	312	220	L
Stenography 2	2	317	317	I
Typewriting	3	313A	326	R
Typewriting	3	312	224	OO
Typewriting	3	313B	313B	S
Stenography 1	3	317	317	PP
Typewriting	4	313A	318A	D
Typewriting	4	312	118	OO
Study	4	317	317	II
Typewriting	4	203	203	QQ

If any teacher discovers any conflicts or errors in the above schedule, please notify RR immediately.

Teachers whose class or study room pupils are to go to rooms different from those to which they are regularly assigned should notify these pupils on each of the two days preceding the day of the change.

(11) Publicity and Connections with the Local Chapter of the National Office Management Association: The principal of the school communicated with the president of the local chapter of the National Office Management Association as soon as the High School of Commerce was accepted as a testing center and announced this fact at a luncheon meeting. The president of the chapter was asked to present the certificates to the successful candidates at a school assembly.

Three news stories were outlined to be carried by the local papers:

1. The establishment of the testing center, the nature of the tests, and the number of candidates registered March 1.
2. The Schedule of tests.
3. The results.

The fact that certified workers were available was utilized by the Bureau of Placement of the School System.

(12) Results: The results of the tests are presented to show:

1. The percentages of the candidates who were successful on the various tests.

2. Certain percentile scores on the various phases of the tests.

The figures representing the percentages of candidates who were successful on the tests are shown in Table V.

TABLE V

Showing the Percentage of Candidates certified on the Occupational Tests which were Taken by the High School of Commerce Group

Test	All Testees		High School Students		High School of Commerce	
	Tried	Cert.	Tried	Cert.	Tried	Cert.
Stenography	1318	944 71.5%	962	660 69%	42	30 71%
Typing	655	443 68%	524	325 62%	13	9 69%
Bookkeeping	737	399 54%	562	297 53%	24	14 58%
Machine Calculation	210	128 60%	174	108 62%	10	7 70%

The candidates for the tests included college students, high school students, and an unclassified group. Table V shows that the figures representing the percentages of candidates from the High School of Commerce, who were successful

to be equal to or greater than the corresponding figures representing All the candidates and also the High School group.

The number of tests actually taken differs from the figures shown in Table II because several pupils secured positions and left school before the examinations were conducted.

Tables VI, VII, VIII, and IX compare certain percentile scores made by all the candidates and the High School of Commerce candidates on the Stenographic, Bookkeeping, Typing, and Machine Calculating Tests. These tables are presented in order and a summary given at the end.

TABLE VI

Showing a Comparison of Certain Percentile Scores Made by all the Candidates and the High School of Commerce Group on the Stenographic Test

	% ILE	GEN. INF.	ENG- LISH	BUS. ARITH.	BUS. INF.	STEN- OG'Y	WGTD. FUND.	COMPOSITE
All	95	88	120	14	34	272	237	558
H.S.C.	95	88	112	15	38	246	250	531
All	75	69	103	13	22	232	197	481
H.S.C.	75	73	93	13	27	230	202	480
All	50	55	91	10	14	198	168	418
H.S.C.	50	55	83	10	20	194	172	428
All	25	39	74	8	6	160	135	358
H.S.C.	25	33	74	8	10	164	140	358

High School of Commerce--42 cases

TABLE VII

Showing a Comparison of Certain Percentile Scores Made by all
the Candidates and the High School of Commerce Group on the
Bookkeeping Test

	% ILE	GEN. INF.	ENG- LISH	BUS. ARITH.	BUS. INF.	BOOK- KEEP.	WGTD. FUND.	COMPOSITE
All	95	95	112	15	36	178	254	613
H. S. C.	95	84	118	15	40	162	275	615
All	75	76	91	13	27	168	216	542
H. S. C.	75	76	97	13	33	153	234	561
All	50	59	69	11	18	148	181	480
H. S. C.	50	70	67	11	27	140	201	498
All	25	41	47	10	8	116	146	400
H. S. C.	25	41	44	9	20	124	148	408

High School of Commerce--24 cases

TABLE VIII

Showing a Comparison of Certain Percentile Scores Made by all
the Candidates and the High School of Commerce Group on the
Typing Test

	% ILE	GEN. INF.	ENG- LISH	BUS. ARITH.	BUS. INF.	TYP- ING	WGTD. FUND.	COMPOSITE
All	95	85	114	14	33	141	241	563
H. S. C.	95	55	91	13	32	110	195	476
All	75	63	93	11	20	124	192	469
H. S. C.	75	44	75	11	22	100	163	403
All	50	47	77	9	10	107	155	403
H. S. C.	50	33	64	11	6	89	152	366
All	25	29	57	6	3	84	118	326
H. S. C.	25	16	43	8	0	65	114	288

High School of Commerce--13 cases

TABLE IX

Showing a Comparison of Certain Percentile Scores Made by all the Candidates and the High School of Commerce Group on the Machine Calculating Test

	% ILE	GEN. INF.	ENG- LISH	BUS. ARITH.	BUS. INF.	MACH. CAL.	WGTD. FUND	COMPOSITE
All	95	85	107	14	32	116	230	521
H.S.C.	95	87	99	15	34	83	241	482
All	75	64	90	13	22	104	188	450
H.S.C.	75	78	84	13	27	80	186	437
All	50	50	75	10	12	86	163	395
H.S.C.	50	64	71	10	22	76	168	378
All	25	32	54	8	4	67	131	331
H.S.C.	25	21	46	7	8	57	139	302

High School of Commerce--10 cases

The figures in Tables VI and VII are of greater significance than than the figures in Tables VIII and IX. Tables VI and VII show the results of the Stenographic and Book-keeping Tests. These tests cover the entire preparation of the pupils of the Stenographic and Bookkeeping curricula (courses). The Typing and Machine Calculating Tests cover preparation which is only part of a curriculum or is elective.

Summary:

- (1) All the percentile scores of the High School of Commerce candidates on the Stenographic and Bookkeeping Tests compare favorably with those of All the candidates.
- (2) All the percentile scores of the High School of Commerce group on the Business Information phase of the Stenographic and Bookkeeping Tests are higher than the scores made by All the candidates.
- (3) The small number of cases in the High School of Commerce groups shown in Tables VIII and IX do not warrant a critical comparison.

S U C C E S S F U L C A N D I D A T E S

C H A P T E R I V

SUCCESSFUL CANDIDATES

The successful candidates on the Stenographic and Bookkeeping Tests are considered in this chapter.

- (1) The Stenographic candidates are considered first. Each case is listed with the I. Q., English Composite, and Composite Grade Placement scores. These are found in Table X.

TABLE X

SHOWING THE INTELLIGENCE QUOTIENTS, ENGLISH COMPOSITE SCORES, AND GRADE PLACEMENT SCORES MADE ON THE PROGRESSIVE ACHIEVEMENT TESTS BY THE SUCCESSFUL PUPILS WHO TOOK THE STENOGRAPHIC NATIONAL CLERICAL ABILITY TEST

PUPILS	I. Q.	ENGLISH COMPOSITE*	COMPOSITE
1	113	43.9	14.4
2	116	42.3	14.0
3	142	44.4	15.0
4	103	43.0	13.8
5	110	41.0	13.9
6	110	41.8	14.0
7	123	40.2	13.8
8	120	42.8	14.0
9	116	43.3	14.0
10	124	45.0	15.0
11	109	42.7	14.0
12	102	40.6	13.3
13	118	41.8	13.9
14	119	42.2	13.7
15	113	39.4	12.7

Table X

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PUPILS	I. Q.	ENGLISH COMPOSITE*	COMPOSITE
16	133	43.7	12.7
17	129	41.9	13.6
18	115	43.3	14.3
19	110	36.2	10.8
20	128	41.9	14.0
21	108	44.2	14.3
22	114	42.7	14.0
23	130	44.5	14.3
24	102	42.7	14.1
25	114	44.5	14.3
26	124	38.3	13.4
27	118	45.4	14.5
28	102	39.0	13.5
29	110	41.1	13.8
30	131	47.0	15.5

*--The English Composite score is the aggregate of the three phases of the English Test.

The following notations may be observed in Table X:

1. The lowest I. Q. is 102.
2. Twenty-nine of the Composite Grade Placement scores are above 12.7.
3. Twenty-nine of the Composite English scores are above 38.0.
4. The two low scores were made by the same candidate.

This candidate was investigated and found to be very accurate in the mechanics of shorthand and typing. This evidently enabled her to do acceptable work even though

her English accomplishment was not as high as the other candidates. Her low Composite Grade Placement score was due to very poor achievement in Arithmetic.

It seems that an I. Q. of at least 102, a Composite Grade Placement score of at least 12.7, and an English Composite score of at least 38.0 may be considered as characteristic of a successful beginning stenographer.

(2) The successful candidates on the Bookkeeping Tests are considered in terms of I. Q.'s, and Composite Grade Placement scores. These are found in Table XI.

TABLE XI

Showing the Intelligence Quotients and Grade Placement Scores Made on the Progressive Achievement Tests by the Successful Pupils who Took the Bookkeeping National Clerical Ability Test

PUPILS	I. Q.	COMPOSITE
1	132	15.0
2	113	14.4
3	112	14.3
4	105	11.9
5	116	15.0
6	142	14.5
7	106	14.4
8	110	13.9
9	124	15.0
10	111	13.2
11	112	14.3
12	118	14.5
13	111	14.5
14	101	13.4

It may be observed that the lowest I. Q. in Table XI is 101, and with one exception the Composite Grade Placement scores are above 13.0.

The case with the 11.9 score was investigated and found to be low in English but fairly strong in Arithmetic which is an important factor in Bookkeeping.

It seems that an I. Q. of 101 or better and a Composite Grade Placement Score of about 13.0 are characteristic of a successful beginning bookkeeper.

C H A R A C T E R I S T I C S

O F

V A R I O U S G R O U P S

C H A P T E R V

CHARACTERISTICS OF VARIOUS GROUPS

This chapter contains data concerning various groups of pupils, namely: the Stenographic, Bookkeeping, Sales, and Clerical groups of the XII A class; the entire XII A class, and the members of the IX A class who elected to enter the High School of Commerce.

- (1) The Vocational Groups of the XII A Class: The characteristics of the vocational groups of the XII A class are presented in Tables XII, XIII, and XIV. These are presented in order and are followed by significant observations.

TABLE XII

Showing the Q1, Median, and Q3 of the Intelligence
Quotients for Each Group of the 1940

XII A CLASS

	Q1	Median	Q3
Stenographic group 159 cases	103.5	109.1	114.7
Bookkeeping group 61 cases	100.0	110.0	114.4
Sales group 39 cases	92.2	103.9	114.7
Clerical group 31 cases	94.4	100.9	107.1

TABLE XIII

Showing the Q1, Median, and Q3 of the Composite
Grade Placement Scores for Each Group of the
1940 XII A Class

	Q1	MEDIAN	Q3
Stenographic group 159 cases	12.4	13.1	13.8
Bookkeeping group 61 cases	11.4	11.9	13.7
Sales group 39 cases	10.2	11.8	12.9
Clerical group 31 cases	10.4	11.6	12.4
		Norm	12.8

TABLE XIV

Showing the Q1, Median, and Q3 of the Composite
English Scores of the Stenographic Group
of the 1940 XII A Class

	Q1	MEDIAN	Q3
161 cases	38.05	40.06	41.64

Seventy per cent of the pupils of the XII A class are in the Stenographic and Bookkeeping groups. These are the most highly specialized and most difficult courses. For these reasons observations are confined to these groups.

A--The Stenographic Group: In noting the Q1 scores of the stenographic group we find they almost coincide with the lowest scores which are characteristic of a successful beginning stenographer. See Table XV.

TABLE XV

Showing a Comparison of the Lowest Scores which are Characteristic of a Beginning Stenographer and the Q1 scores of the Stenographic Group

	I. Q.	ENGLISH COMPOSITE	COMPOSITE
Lowest Scores	102.0	38.00	12.7
Q1	103.5	38.05	12.4

From the above figures we may make a conservative compromise of:

I. Q.	ENGLISH COMPOSITE	COMPOSITE
104--100	38.00	12.4

and set these up as the characteristics of a successful beginning stenographer.

B--The Bookkeeping Group: Observation of the scores of the bookkeeping group shows that more than half of the cases are below the Composite Grade Placement score (13.0) that indicates a successful beginning bookkeeper. It also shows that the Median (11.9) is 0.9 below the Norm of 12.8. In other words, half of the pupils who took the bookkeeping course were almost a year below average.

(2) The XII A and IX A Pupils: Table XVI shows the Grade Placement scores of the entire XII A class and the members of the IX A class who elected to come to the High School of Commerce.

TABLE XVI

Showing Q1, Median, and Q3 of the Grade Placement Scores on Certain Phases of the Achievement Test Made by the 1940 XII A Class and the Members of the 1940 IX A Class

	Reading Vocabulary			Reading Comprehension		
	Q1	Median	Q3	Q1	Median	Q3
XII A	11.90	13.00	13.75	11.95	12.74	13.83
IX A	8.40	9.21	10.08	8.31	9.48	10.38
Difference	3.50	3.79	3.67	3.64	3.26	3.45

TABLE XVI

(con't)

	LANGUAGE			COMPOSITE		
	Q1	Median	Q3	Q1	Median	Q3
XII A	12.00	13.48	14.60	11.68	12.75	13.69
IX A	8.28	9.11	9.8	8.10	8.90	9.49
Difference	3.72	4.37	4.8	3.58	3.85	4.20
XII A Norm--12.8						
IX A Norm-- 9.8						

Observation of the differences between the Q1 scores of the XII A pupils and Q1 scores of the IX A pupils who elected to come to the High School of Commerce reveals no figure higher than 3.72.

If we increase this difference to 4.0 we are making a liberal allowance for possible growth during the three school years. The difference in the English Composite scores would then be 12.0. As stated before, the English Composite score is the aggregate of the three phases of the English test. If we deduct these figures from the figures representing the lowest scores of a successful beginning stenographer, we may then have the scores which represent the standards of admission to the stenographic course.

These figures are:

I. Q.	English Composite	Composite
104--100	26.00	8.40

It may be noted that the English Composite figure is very close to the Q1 score of the IX A pupils who elected to come to the High School of Commerce. This is shown in Table XVII.

TABLE XVII

Showing the Q1, Median, and Q3 of the Composite English Scores of the Members of the 1940 IX A Class who Elected to Enter the High School of Commerce

	Q1	Median	Q3
333 cases	25.51	27.58	29.70

S U M M A R Y

O F

D A T A, C O N C L U S I O N S, A N D

A P P L I C A T I O N S

C H A P T E R VI

SUMMARY OF DATA, CONCLUSIONS, AND APPLICATIONS

As stated in the introduction, this study is primarily concerned with the establishment of data for guidance, but it is an integral part of the whole curriculum development program. From this study various facts were derived which are of value to the larger project. These are presented here.

(1) Facts Related to the Whole Problem of Curriculum Development:

1. The results of the Stenographic Test show that the offerings of the Stenographic courses give adequate preparation for this occupation.
2. The results of the Bookkeeping Test show that the offerings of the Bookkeeping course give adequate preparation for this occupation. However, the nature of the Bookkeeping Test reveals that adequate preparation is given in the first two years of the Bookkeeping sequence. The last year offers cost accounting, which is not considered a suitable offering until the beginner has had an opportunity to get some experience in the application of the basic principles.

3. The characteristics of a successful beginning stenographer derived from this study are I. Q. at least 104--100, English Composite score of at least 38.0, and Composite Grade Placement score of at least 12.4. The application of these figures to the Stenographic group of the 1940 XII A class shows that more than 25% of the pupils probably did not follow the course with profit.

The characteristics of the successful beginning bookkeeper derived from this study are I. Q. at least 104--100 and a Composite Grade Placement score of at least 13.0. The application of these figures to the Bookkeeping group of the 1940 XII A class shows that more than half of the pupils probably did not follow the course with profit.

More suitable vocational offerings should be provided for these pupils.

4. The Q1, Median and Q3 of the Composite Grade Placement scores of the Bookkeeping group of the 1940 XII A class are:

Q1	Median	Q3
11.4	11.9	13.7

These indicate a top group of superior pupils and the remainder below average.

All these pupils completed the highly specialized Bookkeeping course. The question of the measurement of progress is raised. This is the concern of the Committee on Marking.

5. All groups made high scores on the Business Information phase of the tests. Such courses as Business Law, Office Routine, Economics, and Bookkeeping contribute to this field. These are all required courses. Overlapping is clearly indicated.

(2) Data for Guidance: The definite conclusions arrived at from this study may be stated briefly.

1. The standards of admission to the Stenographic course derived from this study are:

I. Q.	Composite Grade Placement	English Composite Score
104--100	8.4	26

These are to be the attainments of the pupil at the end of the IX A semester.

2. No standards of admission to the bookkeeping course could be set up without further study.

(3) Use of the Study: This study was presented to the Steering Committee for Curriculum Development which passed it on to the Committee on Guidance. A list of pupils in the stenographic course of the 1940 XII A class who did not measure up to the suggested standards was prepared, and the cases were investigated. It was the opinion of the teachers that these pupils had not followed the course with profit. The suggested standards for admission to the stenographic course were adopted.

A similar procedure was followed with the bookkeeping group, and the following standards were adopted for admission to the Bookkeeping course:

I. Q.	Arith. Fundamentals	Composite
104--100	8.0	8.4

These standards were used in the guidance of the September 1940 X B class in the selection of their vocational courses. The results are shown in Table XVIII.

TABLE XVIII

Showing the Distribution of Pupils of the XII A June 1940 Class and the X B September 1940 Class

		June 1940 <u>XIIA</u>	September 1940 <u>XB</u>
College Preparatory	1	7.30%	5.62%
Bookkeeping	2	20.78%	12.28%
Stenographic	3	48.87%	41.43%
Sales	4	13.48%	15.60%
Clerical	5	9.55%	25.06%
Sales and Clerical	4 & 5	23.03%	40.66%

Table XVIII shows that the application of the stated standards of admission to the Stenographic and Bookkeeping courses in the guidance of the 1940 X B class resulted in a distribution of pupils different to that of the 1940 XII A class. The percentage of pupils taking the Stenographic and Bookkeeping courses was reduced, with a corresponding increase in the percentage taking the Sales and Clerical courses. The figures for the combined Sales and Clerical courses are 1940 XII A class 23.03%, 1940 X B class 40.60%.

This study was also used by the Committee on the Bookkeeping Course, the Committee on the General Business Course, and the Committee on Marking.

- (4) General Conclusions: It is concluded that the standards of admission to the Stenographic and Bookkeeping courses are sound and conservative and may be used with little fear of denying any pupil a fair opportunity.

It is recognized that two different groups of pupils were used in determining the apparent growth during the high school course. This limitation will be eliminated when IX A and XII A scores are obtained for the same pupils. It is also recognized that this study must be repeated as changes are made in the curricular offerings.

Approved by::

Albert W. Purvis
U.S.D.

Thesis Committee

Date May 7, 1941

