Study of stenographic employment standards in selected Missoula business firms, with implications for curriculum improvement

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A STUDY OF STENOGRAPHIC EMPLOYMENT STANDARDS IN SELECTED MISSOULA BUSINESS FIRMS, WITH IMPLICATIONS FOR CURRICULUM IMPROVEMENT

by

MARY CATHERINE RILEY

B. S. Montana State University, 1953

Presented in partial fulfillment of the requirements for the degree of Master of Education

Montana State University

1957

Approved by:

Chairman, Board of Examiners

Dean, Graduate School

Date
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CHAPTER I

I. INTRODUCTION

When the business teacher attempts to measure the competence of pupils for stenographic positions, he is faced with a number of problems that seem to defy solution and make the task impossible. Business educators are agreed that one of the ultimate objectives of any vocational business training is the development of that degree of skill which is required on the job, but here the agreement seems to end. A study of current literature on the subject of standards for respective skill courses leaves one in such a dilemma that one is almost tempted to choose at random that set of standards which is most neatly tabulated on a single page, adopt it for the classroom, and sink into a comfortable rut.¹

Why is the problem of standards such an issue in the field of business education? According to Nichols,

The terms "standards" is a tricky one. As used in business education, it raises many questions. For what purpose is a standard set? Who is responsible for setting standards? Should standards be fixed at any level or time, or be flexible enough to function under any and all labor conditions? Should standards for a given calling vary from place to place, and from employer to employer, and from

business to business? Or should they be uniform regardless of location, kind of business, or particular employer.²

Business educators have generally agreed that graduating business students should be able to meet standards of competence. When attempts are made to define those standards, differences of opinion arise. How then is the business teacher to decide what the standards should be for the individual school and community?

II. THE PROBLEM

Since the primary purpose of vocational business education is that of preparing people for initial employment in business and for readjustment and advancement therein, the necessity that the school provide training which the employment market demands has become apparent. Thus, in order to gain a better understanding of the business world for which young people are training, the business teacher must be aware of the employment requirements and policies of the local community—the procedures for hiring employees, the standards of skill performance required for the initial job, and the training prerequisites for satisfactory work on the job. The final achievement of students in the stenographic courses should be adequate to fulfill the requirements for beginners in the local area.

In cognizance of the need for surveys of business occupations of various types, this study sought to secure information from businessmen concerning their employment needs for stenographers and to discover the areas of training which have been weak in the past. Recommendations were then made to improve the training program at Missoula County High School in order that the educational unit would be able to furnish to the community the type and quality of workers that business needs and desires.

Significance of the Problem. The high school business department exists primarily to serve the needs of business. The standards of achievement required in the office are the training standards that the school business department must adopt. The necessity for reducing the gap between standards of achievement in the school and in the business office cannot be emphasized too strongly.3

Educators and businessmen have conceded that the schools should not attempt to determine alone the scope of the business curriculum. The policy of co-operation between business and the schools is the only way to keep abreast of the changing demands of business. As the needs of the office change and expand, the aims and standards of the classroom should change to coincide with the requirements of prospective employers.

---

Haynes and Graham have this to say regarding the importance of the local survey.

Community and occupational surveys are the means used for gaining a better understanding of the business world for which young people are training—the kind of jobs which may be filled by boys and girls just out of school, the standards demanded by business, and the training requisite to the satisfactory filling of each job.4

Haynes and Graham further state that nothing can take the place of the local survey. Business opportunities and customs in individual sections of the country differ greatly. The local survey furnishes pertinent data upon which to base business courses and also adds to the respect of the community for business education.5

According to Payne and Rogers,

Standards are valid only in so far as they measure employability, which is a relative term depending upon a number of factors; namely, the size and location of the community, the types of offices, the number of employees in each, and the economic period in which employment is desired. These factors make the determination of standards a problem which can be approached satisfactorily only through a study of existing local conditions.6

In the past, too many business educators have attempted to gather and formulate materials and courses from textbooks alone rather than from the field in which the students seek

5Ibid, p. 95.
6Payne and Rogers, loc. cit.
employment. By using this practice alone, the teacher can quickly lose contact with the actual problems and techniques of the business office. Because education must be more dynamic than formerly, the time has come when the teacher cannot solve all of his own problems. A successful business education program in a turbulent world is such a complex and broadly sweeping problem that it must be developed through the effort of all who are either directly or indirectly involved.⁷

"We fail to realize that it is not our job," says Finch, "to tell the businessman what he wants in terms of vocational proficiency. We need his advice on that point."⁸

Archer, Keithley and Price have also supported the idea that there is much that alert business educators can do if they will co-operate with the representatives of business. Instruction can be improved only if what is known about standards is adapted on the local level to the local needs.⁹

---


The objectives and standards set up as a result of research by any expert or combination of experts in the business field cannot furnish the individual teacher with a standard yardstick by which he may evaluate his teaching success. Suggestions taken from authorities must be supplemented by conclusions drawn from the local survey in order to determine the proper emphasis to be placed upon different phases of training.10

According to a study made in Boston by Betti, the importance and value of the local study was stressed.

...it is very difficult to construct an adequate business curriculum, to equip a business department, or to set up standards of achievement that will adequately meet the needs of a particular community, without first investigating those needs. Similarly, it is impossible to ascertain the character or extent of the deficiencies of an educational system without soliciting the opinion of employers of the product of that system who are in the best position to discover those weaknesses.11

The student will benefit from research which determines minimum employment standards. Parker Liles describes the effect on the student of the setting of common goals in the school and the office. He believes that as a result of this practice:

10Payne and Rogers, loc. cit.

Failure in beginning jobs would be eliminated or materially reduced. The transition from the school situation to the office would be smooth and pleasant.  

From the point of view of the schools, one of the most important aspects of the measurement of job competence is that it serves as a means of evaluating the effectiveness of the program, of validating that part of the curriculum that aims at vocational preparation, and of indicating the areas in which improvements should be made.

The importance of working with the businessmen of the community through professional contacts has been summed up appropriately in this quotation.

The farmer would soon face starvation were he to give no care to the soil in which he must plant his seed. Likewise, the roots of education are planted and grow or wilt in the sand, the loam, and the ledges of the community.

Purpose of the Study. When the investigator joined the faculty at Missoula County High School in 1953, the Commercial Department had no available recommended standards of accomplishment for students completing the second year of stenographic training. The problem of determining a measure of vocational competence which would meet the needs of the community became apparent. After considerable reading


in the field, the investigator came to the conclusion that a need existed for a study on the local level, since no definite national standards had been established upon which authorities could agree. Such a study would help to establish a foundation for the evaluation of the training program of Missoula County High School.

In summary, the interview method was used to gather data from selected Missoula businessmen in an effort:

1. To determine the basis of initial employment.
2. To discover from each employer whether some form of employment test was used.
3. To determine skill requirements for the initial job.
4. To resolve the most common deficiencies observed in new employees regarding mechanical skills.
5. To determine the kinds of business machines commonly used and considered desirable.
6. To find out whether, in the opinion of the businessman, the school was providing graduates with adequate vocational training.
7. To elicit subjective comments from the respondents which would be of use in improving the preparation of students and in understanding the problems of the office.

Assumptions. For the purposes of this study, the following assumptions were made and followed throughout the study and in the formulation of conclusions:
1. Employers had definite employment standards which they considered desirable and upon which they relied as a basis for employment.

2. Such employment standards were based on success of hiring stenographic personnel and were an adequate measure of ability.

3. The assumption was made that the interview, which was carried on with an interview guide, measured satisfactorily for this study the desirable employment standards in the selected Missoula business firms.

4. Similar studies in other localities were available which permitted adequate comparisons of the findings of the study. Such comparisons provided a check as to the validity of methodology and findings.

Limitations of the Study.

1. No attempt was made to select a random sample of the business firms in Missoula that could be regarded as yielding representative standards and practices for the whole community.

2. The success of the study depended upon the completeness of the interview guide and the success of the interviewer in securing accurate replies.

3. Consideration was limited to vocational skills. No consideration was given to the development of desirable personality traits.
4. Standards for employment were those standards considered for beginning stenographic positions and were considered as minimum standards.

5. Since no office machines, except the manual typewriter, were included in the transcription program, the office machines area was covered only as suggestions on the part of businessmen as to the knowledge they deemed desirable, though not necessarily required, for employment.

6. There was no way of ascertaining from the data available what differences existed between requirements as stated by the representatives and requirements actually observed in the practice of employing stenographers. It must be admitted that important differences may have existed between practices as described and as actually applied in the hiring situation.

Definition of Terms. Words which had special meaning for this study were: (1) stenographer, (2) standard, (3) transcription, (4) production, (5) net words, and (6) vocational competence. For purposes of clarity, the following definitions were assigned to each.

A stenographer was considered as one who takes dictation in shorthand of correspondence, reports, and other matter and transcribes dictated material, writing it out in longhand or using a typewriter. She may perform a variety of related
A standard was considered as a statement of an educational goal or objective.\textsuperscript{15}

Transcription was considered to be the act or process of reproducing in longhand or on the typewriter material taken from dictation in shorthand.\textsuperscript{16} For purposes of this study, transcription was considered as machine transcription, i.e., transcription on the typewriter.

The word, production, acquired a specialized meaning in the teaching of typewriting and of transcription—a meaning which was not given in Webster's dictionary. The word, production, referred to classroom exercises which came as close as possible to the real work of an office, as opposed to mere practice drills. The word referred to a quantity or a heavy flow of such simulated office work.\textsuperscript{17}


\textsuperscript{16}Ibid, p. 430.

words typed by a person in a given length of time, minus a
deduction for errors in spelling and other mistakes.\textsuperscript{13} A
standard word in typewriting was considered a unit of five
strokes (whether on letter keys or on the space bar) used
according to the international typewriting contest rules.\textsuperscript{19}

III. PROCEDURES

Collection of Data. The initial step taken was a
survey of related literature in the field to ascertain the
opinions and recommendations of leading business educators.

The descriptive-survey method of research was selected
for use in gathering data from businessmen in the belief that
it would yield the most information on conditions as they
existed in actual practice. According to Good and Scates,

\begin{quote}
One may have goals to which he aspires; to make plans for
reaching these goals, he must find out what the present
situation is, in order to know where to begin. A survey
of present conditions is an essential guide to one's
thinking, whether in evaluating the course he is now
following, or in embarking on a new venture. For any
purpose, the starting point is important.\textsuperscript{20}
\end{quote}

Good and Scates further state that the survey presents
a unique opportunity to do two things:

(1) to establish the value of facts or to show their value,
so that regular reports may then later be called for;

\begin{itemize}
\item \textsuperscript{13}Good, \textit{op. cit.}, p. 272.
\item \textsuperscript{19}\textit{Ibid.}, p. 337.
\item \textsuperscript{20}Carter V. Good and Douglas E. Scates, \textit{Methods of
\end{itemize}
(2) to center attention on the most important things to be reported.\textsuperscript{21}

The survey method helps to focus attention on needs that might otherwise remain unobserved for some time. Survey evidence may direct attention to current trends and permit the evaluation and direction of these new tendencies in the process of taking shape.\textsuperscript{22}

After studying the various methods of gathering data, the investigator decided upon the interview guide as the instrument to be used in the study. Although many methods of conducting surveys existed, the use of the interview guide is recommended by Callan for two reasons.

First, the use of standardized questions will give direction to the interview and make possible a uniform system of collecting and cataloging the information obtained. Second, personal contact of the interviewer with the businessman provides an invaluable experience.\textsuperscript{23}

Because the development or trend of the conversation could have proceeded in any direction, no instrument prepared in advance could have met the situation fully.\textsuperscript{24} The interview guide provided a means of pointing out particular areas, but also allowed the interviewer to take advantage of the

\textsuperscript{21}\textit{Ibid}, p. 252. \hspace{1cm} \textsuperscript{22}\textit{Ibid}, p. 554.


\textsuperscript{24}Good and Scates, \textit{op. cit.}, p. 637.
opportunity of following up any lead which was given and of stimulating the person to talk on it and develop it.\textsuperscript{25}

By means of the interview, it was possible to secure data that could not have been obtained through the less personal procedure of distributing a reply blank.

Again, the interview permits the interviewer to gain an impression of the person who is giving the facts, to form some judgment of the truth in the facts, and to "read between the lines," things that are not said.\textsuperscript{26}

After the related theses and other pertinent literature were studied and after the questions to be answered by the study had been formulated, a tentative interview guide was compiled.\textsuperscript{27}

After contacting the Bureau of Business Research at Montana State University and the Missoula Chamber of Commerce, the writer found that no list was available which listed all businesses in Missoula which employed one or more stenographers. Two alternatives were apparent in determining a sampling for the study.

The first alternative considered was the possibility of compiling a list of businesses from the classified section of the telephone directory. In addition to this step, a check would have been necessary, either by personal contact, or by


\textsuperscript{27}Appendix A.
telephone, to make certain that all of the businesses actually employed a stenographer. The time element of a personal contact and the possibility of a poor initial contact by telephone made both checks impossible.

The second alternative was to use businessmen who had co-operated with the high school on the part-time stenographic work program. Because the supply of stenographers for the Missoula area came from Montana State University, the Modern Business College, wives of University students and from the surrounding communities as well as from Missoula County High School, the best way of evaluating the products of the local high school program appeared to be the contacting of those businessmen who had had an opportunity to observe and evaluate the abilities of the graduates.

The sampling included forty-three businessmen who had participated in the work program during the four-year period, 1953-57. Of the forty-three participants, nine were principals in the elementary school system and were participating for the first time. Since the principals had had no opportunity to hire stenographic employees, they were not asked to answer the questions pertaining to employment requirements.

A letter of introduction, accompanied by a sample copy of the interview guide, was mailed to each of the forty-three businessmen on December 1, 1956.

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28Appendix B.
The investigator personally conducted all interviews during the period, December 15, 1956 to March 1, 1957. Of the forty-three employers who were contacted by letter, forty-one were interviewed. Of the remaining two, one had left Missoula and one preferred to be excluded from the study. Arrangements for interviews were made by telephone a few days in advance at a time which was convenient to the employer. With the aid of the interview guide, the investigator was able to direct the interview to particular areas as well as to discuss points which arose during the course of the interview.

**Treatment of the Data.** The summary of the data acquired by interview will be presented in tabulated form, accompanied by narration, in the following manner:

1. Frequency and percent of procedures used as a basis for employment.
2. Number and percent of businessmen who used stated rate requirements.
3. Distribution and percent of rates and errors on a five minute timed writing.
4. Frequency and percent of respondents regarding the desirability of constructing an employment test for use in the Missoula area.
6. Number of letters typed in an average business day.

7. Ability of high-school-trained employees to meet office standards of performance.

8. Frequency and percent of areas of weaknesses indicated by employers.

9. Types and number of office machines in use.

Recommendations were made for the improvement of the training program at Missoula County High School based upon the needs of Missoula businessmen, recommendations of businessmen nationally, and principles of good educational practices according to leading business educators.

Against the background of this cumulative development of thought regarding the requirements for office personnel, the present study was made. It is hoped that this survey of the opinions of selected businessmen with regard to the ability or lack of ability in meeting the needs of the office may be of some assistance to the educators and to the prospective business employees of the area.

The results of the survey should establish the lack and lacunae in local high school preparation and suggest remedial development and correction.
CHAPTER II

REVIEW OF RELATED LITERATURE

Estelle Popham lists six problems in the measurement of stenographic proficiency which are of great concern to anyone who wants to train vocationally competent graduates. She says:

1. Businessmen in many instances do not know what they want in terms of knowledge and skills standards.

2. Levels of competence for positions vary from office to office even within one company.

3. Business skills are measured in the office only in initial and routine jobs. Any measure of competence, then, is in terms of initial employment rather than in terms of promotion.

4. Not enough is known about the nature of office-style dictation or office production standards to measure by them the ability of pupils to handle office work.

5. School conditions are so different from office conditions even in the most carefully planned situations that measurement of office competencies is difficult.

6. The philosophy of the modern public school is that pupils should not be failed, that receiving low grades may thwart their personalities; therefore, each pupil should develop in terms of his potentialities rather than in terms of any external standards.\(^1\)

---

I. PLACE OF A STANDARD IN BUSINESS EDUCATION

Because business teachers have been concerned with grading, there has been a tendency to set up exact standards of measurement. Tonne points out the importance of realizing that, with the exception of mathematics, nothing with which human beings are concerned, can be measured exactly. He states that there are two types of standards in business education—learning and job-placement standards. The learning standard is not only desirable but also necessary in learning the basic skills, but the use of the learning standard is often disastrous and usually completely useless when applied to job placement.2

Place also stresses the dangers of uniting the two standards by stating that some differentiation must be made between business and school standards because the elements involved in each are so different.3

Lamb points out the fact that a skills test measures not the ability of the testee to perform on the job but the ability to perform under test conditions, and between the two there is a great deal of difference.4


The place of the learning standard was summarized by Tonne when he states:

As learning standards, formal measures of achievement have their place. Most teachers seem to agree that the best way to develop the basic skills necessary for success in shorthand is through formal drill required to attain a minimum school standard. With this attitude there can at present be no quarrel. When, however, the sole measure of job training is presumed to be this achievement, then teachers are blind to job needs and students are sadly led astray.5

II. RECOMMENDATIONS OF BUSINESS EDUCATORS

Tonne gives the following suggestions as learning standards:

Typewriting rate: 50 net words per minute

Shorthand dictation: 80 words per minute on dictation given in office style, i.e., interruptions, hesitations, etc.

Transcription rate: no stated rate.6

Leslie suggests that, at the end of four semesters of typewriting when dictation is given at 80-100 words a minute in a group of letters comprising a total dictation of 800-1000 words, the pupil should transcribe at the rate of 20-25 words a minute with 20 words as the minimum rate acceptable for credit. He suggests that at least 75 percent


of the letters in any five consecutive daily transcription periods should be mailable.7

Leslie further states that quality is to be taken for granted; and the demand is for the production of larger quantities of material coming within the predetermined minimum standard of quality. Because emphasis on any one of the many factors that make up transcription changes the quantity or quality of other factors, Leslie says it is extremely difficult to make a fair comparison between transcription classes, even in the same school, and almost impossible to make comparisons between transcription classes in different schools.8

Popham gives the following rates of accomplishment at the end of the fourth semester. She says that a student is expected to transcribe two 5-minute dictations given at the rate of 100 words per minute as a minimum. She also suggests the attainment of a rate of 120 words per minute for five minutes as a goal for the superior student.9

---

7 Leslie, op. cit., pp. 53-54.
8 Ibid., pp. 35-39.
9 Popham, op. cit., p. 69.
The suggestion is made by Lamb that the ultimate goal for the end of the fourth semester be a minimum recording rate of 100 words per minute on unpracticed material of average difficulty (measured in five-minute dictations and letters of various lengths) with a minimum transcription rate of such notes at 20 words per minute on first trial.\(^\text{10}\) When she included both five-minute dictations and letters, she stated the purpose of each. The five-minute dictation with a 5 percent error allowance serves as a progress test and is aimed at speedbuilding as well as measurement; whereas the dictation for accurate transcription on letters is considered in terms of production aimed at controlled recording that makes accurate transcription possible.\(^\text{11}\)

In a discussion of the idea that the transcription rate could be evaluated in terms of a fraction of the typewriting rate, Place points out that the variables which affect transcription cannot be averaged.\(^\text{12}\) Leslie, on the same subject, states that it is true that, all other things being equal, the eighty-word-a-minute typist would turn out more transcription than the forty-word-a-minute typist--though, of course, all other things are seldom or never equal. He

\(^{10}\) Lamb, op. cit., p. 97.

\(^{11}\) Lamb, op. cit., pp. 194-195.

\(^{12}\) Irene Place, "Transcription Factors and Procedures," Business Education Forum, 8:17-19, October, 1953.
believes that the theory was based on the idea that the process of translation from shorthand notes into typing represented a definitely determinable "drag" on typing speed. He points out that the fallacy in that interpretation was the "drag" was not determinable and that it fluctuated wildly. When typing from printed copy, there were fewer difficulties and each difficulty may have cost the typist seconds rather than minutes. When transcribing from shorthand copy, there were more difficulties and each difficulty was likely to cost minutes rather than seconds.13

III. REPORTS OF STUDIES IN OTHER AREAS

In a study made in the Los Angeles area in 1950, Morrell recommended that less emphasis be placed upon the development of speed in excess of 50 words a minute in typewriting and 100 words a minute in shorthand. He suggested more emphasis be placed on other skills in typewriting, such as writing of numbers, tabulation placement, and on accuracy in general. In the area of shorthand, more emphasis on accuracy of transcription was needed.14

The National Office Management Association conducted a survey of 1,059 companies on vocational requirements of beginning workers. Sixty-seven percent of the companies


had proficiency standards, but typewriting requirements ranged from 40 to 60 words per minute, shorthand speeds ranged from 70 to 100 words a minute, and transcription speeds ranged from 30 to 70 words per minute. The following is a summary of the results showing the satisfactory requirements in 1950 and suggested goals for 1953 and 1960.

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<td>Typewriting, nwpm</td>
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<td>10 minutes</td>
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<td>55</td>
<td>70</td>
</tr>
<tr>
<td>5 or less errors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shorthand, wpm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 minutes</td>
<td>80</td>
<td>100</td>
<td>120</td>
</tr>
<tr>
<td>5 percent error</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>allowance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transcription, wpm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>unfamiliar copy</td>
<td>30</td>
<td>35</td>
<td>45^15</td>
</tr>
<tr>
<td>10 minutes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>mailable</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In a study made in selected life insurance companies in Oklahoma in 1952, Cunningham recommended that a prospective employee possess a minimum average typewriting rate of 50 words a minute, the ability to take dictation at the rate of 80 words a minute, and the facility to transcribe the

dictation accurately and neatly at an average transcription rate.\textsuperscript{16}

Peterson reports the following requirements were in use in the Denver area. In typewriting, a rate of 40 to 50 words per minute was considered adequate, but the shorthand dictation rate ranged from 60 to 120 words per minute. No transcription rate was indicated, but the majority of businesses indicated interest in accuracy rather than speed.\textsuperscript{17}

In the same study, the following practices which were in use in the schools at the time were given. The range in typewriting rates varied from 40 to 60 words per minute, the shorthand dictation rate ranged from 100 to 120 words per minute, and the goal in transcription ranged from 10 to 15 words per minute although the majority of schools did not have established standards for transcription work.\textsuperscript{18}


\textsuperscript{18}Ibid, pp. 159-160.
IV. THE NEEDS OF BUSINESSMEN

How does the business teacher determine the needs of businessmen? According to Tonne, the businessmen wanted an adequate amount of production of mailable letters but what was mailable for one person was often not mailable for another; and a letter that was mailable for one person at one time was not mailable at another time.19

Hellman expressed the opinion that not all the blame for the lack of standards could be laid at the door of the schools. She states:

A study of the questionnaires and of results of the interviews indicates that employers do not really know what they want or expect of potential employees. About the only common denominator that can be found is they would like their employees to be endowed with the characteristic of adaptability plus the basic skill required by their specific jobs, though this latter requirement is often only vaguely defined.20

O'Toole recommended, on the basis of interviews with employers, that the businessman's first concern was not a desire for a well-trained employee, but rather a desire for people with enthusiasm, enthusiasm to do the job assigned to them as though it mattered. After the initial cry for graduates who care came the request for stenographers


who are interested in spelling correctly, erasing neatly, typing sense rather than nonsense and particularly, "placing punctuation with finesse and not flinging it into the paragraphs like confetti at their sister's wedding, letting it fall where it will."21

Turille suggested a guide of 100 words per minute in shorthand with the ability to transcribe four average length letters from notes, with envelopes, in one hour. He stated, however, that since business office standards emphasize production, more should be done in the classroom with whole units of work, with particular emphasis on finding the best way to do a particular job.22

A systems man gave his definition of what a standard should be. He said,

"the number of acceptable work units that can be completed in a given time, under specific conditions.

I have emphasized two words. Notice the word "acceptable." I don't think you can say that incorrect work is completed work. And neither can it be acceptable unless the general quality is up to a reasonable point.23

Prinz states that in the area of performance, we have difficulty establishing standards which will be applicable

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to different organizations, not to mention the difficulty which management experiences in determining those which will apply to different parts of the same organization. Because of the many changes in the business world, a great deal of time and study must be given to each situation. With each change in method, the effort in revising standards is approximately the same as the original effort.  

"Efforts to determine universal standards have been unsuccessful because the conditions are not the same in each office," Pierce said, "and because of the wide difference in the work methods." He continued, "My experience has indicated that young people are trained in the basic skills as taught under laboratory conditions, but lack understanding of what constitutes a day's work."  

V. THE NATURE OF OFFICE DICTATION

Green, in a study of actual dictation in offices, compiled a table which gives the percent of dictators which can be served, according to the writer's shorthand speed. The data of Table I present a summary of the findings of Green's study.  

<table>
<thead>
<tr>
<th>Writer's Shorthand Speed (WAM)</th>
<th>Easily</th>
<th>Fairly Easily</th>
<th>Just Barely</th>
<th>Percent Cannot Take</th>
</tr>
</thead>
<tbody>
<tr>
<td>140</td>
<td>90%</td>
<td>5% (= 95%)</td>
<td>5% (= 100%)</td>
<td>0%</td>
</tr>
<tr>
<td>130</td>
<td>80%</td>
<td>10% (= 90%)</td>
<td>8% (= 98%)</td>
<td>2%</td>
</tr>
<tr>
<td>120</td>
<td>70%</td>
<td>13% (= 83%)</td>
<td>12% (= 95%)</td>
<td>5%</td>
</tr>
<tr>
<td>110</td>
<td>60%</td>
<td>15% (= 75%)</td>
<td>10% (= 85%)</td>
<td>15%</td>
</tr>
<tr>
<td>100</td>
<td>40%</td>
<td>20% (= 60%)</td>
<td>15% (= 75%)</td>
<td>25%</td>
</tr>
<tr>
<td>90</td>
<td>20%</td>
<td>20% (= 40%)</td>
<td>20% (= 60%)</td>
<td>40%</td>
</tr>
<tr>
<td>80</td>
<td>10%</td>
<td>15% (= 25%)</td>
<td>15% (= 40%)</td>
<td>60%</td>
</tr>
<tr>
<td>70</td>
<td>1%</td>
<td>9% (= 10%)</td>
<td>10% (= 20%)</td>
<td>80%</td>
</tr>
<tr>
<td>60</td>
<td>0%</td>
<td>1% (= 1%)</td>
<td>9% (= 10%)</td>
<td>90%</td>
</tr>
<tr>
<td>50</td>
<td>0%</td>
<td>0% (= 0%)</td>
<td>1% (= 1%)</td>
<td>99%</td>
</tr>
</tbody>
</table>

\[27^{Ibid.}\]
If the student achieved 100 words a minute, the student could manage the dictation of up to 75 percent of the dictators. If the student accomplished 80 words a minute, the student could manage 40 percent of the dictators.

Green found that spurt writing speed was not enough. He states that the stenographer must be able to sustain the top speed for at least three minutes and a fluent cruising speed for at least five minutes.

We know, now, that a speed range between 85 and 105 words a minute (the 85 for 5 minutes, the 110 for 3) is necessary to record the average dictator. We know that a range between 100 for 5 minutes and 125 for 3 minutes is necessary to record the rapid dictator, and that the range of 115 for 5 minutes to 140 for 3 minutes is necessary to work for the very rapid dictator.28

Green states that re-evaluation could lead to only one goal—the establishing of 120 words a minute for five minutes. According to Green,

For the emotional and vocational good of our students, we must help them to the highest possible speed levels of which they are capable so that never will they fail on the job or be limited in their opportunities.

And that means 120 words a minute.29

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28 Ibid.
29 Ibid.
VI. SUMMARY

Current reading indicates that the following points may be considered as guides in the study and evaluation of the local training program.

Place of a Standard in Business Education.

1. The classroom standard must be considered as a learning standard only.

2. The basic skill must be supplemented by occupational know-how in ordinary office stenographic work. Students must have the opportunity to perform simulated office tasks under varying conditions with all the interferences and confusions that actually take place on the job.

Recommendations of Business Educators.

1. A minimum typewriting rate of 50 net words per minute is necessary for the beginning office workers.

2. A minimum shorthand dictation rate of 100 words per minute is recommended on five-minute dictations with 5 percent error allowance. A minimum recording rate of 80 words per minute on letters given in office style, i.e., interruptions and hesitations, appears to be feasible and necessary.

3. Minimum transcription rate of 20 words per minute on letters and dictations at constant speeds.

Reports of Studies in Other Areas.

1. More emphasis was placed upon the accuracy and neatness of the finished product than upon the rate of recording, either in shorthand or on the typewriter.

2. A typewriting rate of 50 net words per minute is recommended as a minimum at the end of two years of training.

3. The range of shorthand dictation rates was from 60 to 120 words per minute with the range of 80 to 100 words per minute predominating.
4. In transcription, primary importance was placed upon the accuracy of the transcript, with a minimum rate ranging from 15 to 20 words per minute.

The Needs of Businessmen.

1. No specific rate requirements by businessmen were found because the demands of each company, not to mention each office, vary greatly. Businessmen indicated that employees have been trained sufficiently in the basic skills.

2. Businessmen have indicated a lack of ability in the transfer of the basic skill to the office situation. A need exists for the development of an awareness of the office demands, i.e., determining the best way to approach each new task, understanding what constitutes a day's work, and applying common sense.

The Nature of Office Dictation. The classroom standard of permitting 5 percent error in a test has no counterpart in an office; the working stenographer has to get all the dictation and to transcribe all of it accurately. To put it mildly: excess speed never handicapped anyone.

Green states that for the good of our students, the teacher has the responsibility to help them to the highest possible speed levels so that never will they fail on the job. Based upon his findings, the minimum recording rate of 100 words per minute for five minutes and 110 words per minute for three minutes appears to be necessary. In addition, a goal of 120 words for five minutes and 140 words per minute for three minutes appears to be desirable for the superior students.

30 Ibid.
CHAPTER III

FINDINGS

Procedures of Employment. Of the forty-one employers contacted, thirty-two indicated their procedures for hiring new employees. The remaining nine were elementary principals in the local school system who had not had the hiring opportunities and were not asked the questions regarding employment procedures.

According to Table II, 75 percent indicated that they hired on the basis of the word of the applicant in a personal interview. Approximately 56 percent said they considered references given by the prospective employee. Only one employer indicated that a contact was made with the teacher trainer although it was possible that the teacher's name may have been given as a reference by the applicant.

Six businessmen, 19 percent, indicated the use of employment tests. All six used a typewriting test while four used a dictation form of test which consisted of the dictation of a letter. The four employers indicated that the letter was not always transcribed and judged upon accuracy. In some cases, the employer merely wanted the opportunity to observe the reaction of the applicant while taking dictation.

Three employers used the Minnesota Clerical Test. The remaining tests, the Kuder Preference Record, Wonderlic Personnel Test, a company-prepared test, and a test on the mimeograph, were each used by one of the employers.

-33-
TABLE II
FREQUENCY AND PERCENT OF PROCEDURES USED AS A BASIS
FOR EMPLOYMENT BY THIRTY-TWO BUSINESSMEN

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Frequency</th>
<th>Percent of Total Number of Businessmen Surveyed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Word of Applicant (Interview)</td>
<td>24</td>
<td>75</td>
</tr>
<tr>
<td>References Given</td>
<td>18</td>
<td>56</td>
</tr>
<tr>
<td>Employment Tests</td>
<td>6</td>
<td>19</td>
</tr>
<tr>
<td>Typewriting Test</td>
<td>6</td>
<td>19</td>
</tr>
<tr>
<td>Dictation</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td>Minnesota Clerical Test&lt;sup&gt;a&lt;/sup&gt;</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Kuder Preference Record&lt;sup&gt;b&lt;/sup&gt;</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Wonderlic Personnel Test&lt;sup&gt;c&lt;/sup&gt;</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Company Test</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Mimeograph</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Teacher Trainer</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>

<sup>a</sup>D. M. Andrew, D. G. Paterson and H. P. Longstaff (New York: The Psychological Corporation).

<sup>b</sup>G. Frederic Kuder, Vocational--Form C (Chicago: Science Research Associates).

<sup>c</sup>E. F. Wonderlic (New York: The Psychological Corporation).
Stated Rate Requirements. Businessmen were asked if they had a rate preference, even though they did not necessarily give a test to measure the rate. The requirements as stated by the interviewees are given in Table III on the following page.

Seventy-two percent replied that they had no preference regarding speed requirements, either accepted as stated or on the basis of a test performance. Nine of the employers, 28 percent, used a stated typewriting rate ranging from 40 words per minute to 60 words per minute. Five of the nine employers stated a desire for a rate of 55 words per minute or higher.

Twenty-one percent listed dictation rate requirements ranging from 80 to 120 words per minute with four of the seven stating a preference of 100 words per minute. None of the employers used a transcription rate requirements.

As shown in the comments following Table III, eight of the employers preferred to hire on a probational basis and seven considered accuracy more important than speed in any of the skills.
### TABLE III

**NUMBER AND PERCENT OF BUSINESSMEN WHO USED STATED RATE REQUIREMENTS**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Number of Respondents</th>
<th>Number Using Each Type</th>
<th>Percent of Total Number of Businessmen Surveyed</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Requirement</td>
<td>32</td>
<td>23</td>
<td>72</td>
</tr>
<tr>
<td>Typewriting Rate*</td>
<td>32</td>
<td>9</td>
<td>23</td>
</tr>
<tr>
<td>(net wpm)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>56 - 60</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>51 - 55</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>46 - 50</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>41 - 45</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dictation Rate**</td>
<td>32</td>
<td>7</td>
<td>22</td>
</tr>
<tr>
<td>(standard wpm)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>120</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>110</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>90</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transcription Rate</td>
<td>32</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

*Comments: Prefer to hire on probational basis. Accuracy more important than speed. If I knew what a normal speed was, I would ask them. Piecework basis of pay so speed is concern of employee, not me.*

**Comments: 100 wpm, adequate; 120, preferred. Would wait for her if she couldn't keep up. No rate; might dictate to see how she reacted.*
Results of Timed Writing. A five-minute timed writing, using copy from the high school textbook of average difficulty, (1.4 syllabic intensity), was given to the stenographers in the employment of the interviewees at the time of the interview. Of a total of forty-one employers interviewed, thirty-one timed writings were given. The remaining ten employers either had no one employed at the time or the employees preferred not take the writing. The results of the test, in terms of net words per minute, are given in Table IV.

The rates ranged from 30 words per minute to 75 words per minute with a midscore of 53 words per minute. Three-fourths of the testees typed at the rate of 45 words per minute or higher while 58 percent were able to type at the rate of 50 words per minute and higher. Speeds exceeding 55 words per minute were attained by 45 percent of the stenographers. Based on the maximum error limit (one error per minute), 75 percent typed the writing with accuracy--five or less errors.
### TABLE IV
DISTRIBUTION AND PERCENT OF RATES AND ERRORS ON A FIVE MINUTE TIMED WRITING

<table>
<thead>
<tr>
<th>Rate</th>
<th>Frequency</th>
<th>Percent</th>
<th>Number of Errors</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>71 - 75</td>
<td>1</td>
<td>3</td>
<td>10 or more</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>66 - 70</td>
<td>0</td>
<td>0</td>
<td>9</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>61 - 65</td>
<td>4</td>
<td>13</td>
<td>8</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>56 - 60</td>
<td>9</td>
<td>29</td>
<td>7</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>51 - 55</td>
<td>4</td>
<td>13</td>
<td>6</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>46 - 50</td>
<td>5</td>
<td>16</td>
<td>5</td>
<td>5</td>
<td>16</td>
</tr>
<tr>
<td>41 - 45</td>
<td>4</td>
<td>13</td>
<td>4</td>
<td>6</td>
<td>19</td>
</tr>
<tr>
<td>36 - 40</td>
<td>2</td>
<td>6</td>
<td>3</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>31 - 35</td>
<td>2</td>
<td>6</td>
<td>2 or less</td>
<td>10</td>
<td>32</td>
</tr>
<tr>
<td>TOTAL</td>
<td>31</td>
<td>99</td>
<td></td>
<td>31</td>
<td>98</td>
</tr>
</tbody>
</table>

---

*Midscore: 53

*Midscore: 4
Desirability of Construction of Local Employment Test. When asked whether they would like to have a test constructed, provided that such a test actually could be constructed, for use as an instrument to measure the employability of prospective employees in the Missoula area, 41 percent of the respondents indicated that such a test would be desirable. Two of the employers qualified their positive response by stating that the test would need to be specific to meet particular business needs. Another employer indicated interest, provided the test could determine the degree of job interest. Thirty-eight percent of the respondents replied "No" to the question, while 22 percent gave no response.

TABLE V

FREQUENCY AND PERCENT OF THIRTY-TWO RESPONDENTS REGARDING DESIRABILITY OF AN EMPLOYMENT TEST FOR THE MISSOULA AREA

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percent of Total Number Responding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>13</td>
<td>41</td>
</tr>
<tr>
<td>No</td>
<td>12</td>
<td>38</td>
</tr>
<tr>
<td>No Answer</td>
<td>7</td>
<td>22</td>
</tr>
</tbody>
</table>

Comments: Would be helpful 2
Would need to be specific to meet particular business needs; would be valuable to have one if it could. 2
Yes, if you can determine degree of job interest. 1
No, feels tests unreliable. 1
Number of Letters Typed in Average Day. Although no attempt was made to determine the specific amount of time per day spent on the actual typing of letters, the employers were asked to indicate the number of letters typed on an average day.

According to Table VI, eleven of the forty-one employers stated that they were unable to determine a figure. Of the eleven, nine were principals who stated that they wrote very few letters; rather, their employees spent a majority of their time performing other duties, such as filing, preparing stencils and helping teachers. Two indicated that the variation was so great during the month that the selection of one day as an average would not be accurate. Three of the employers commented that the stenographer's time was spent primarily in filling in forms.

Of the thirty-one who responded, twenty-four indicated that the number of letters typed per day was fifteen or less while fourteen indicated the daily output as being five letters or less.
TABLE VI
NUMBER OF LETTERS TYPED IN AN AVERAGE DAY
ACCORDING TO FORTY-ONE EMPLOYERS

<table>
<thead>
<tr>
<th>Number of Letters Per Day</th>
<th>Number of Employers</th>
</tr>
</thead>
<tbody>
<tr>
<td>41 and over</td>
<td>2</td>
</tr>
<tr>
<td>36 - 40</td>
<td>0</td>
</tr>
<tr>
<td>31 - 35</td>
<td>1</td>
</tr>
<tr>
<td>26 - 30</td>
<td>1</td>
</tr>
<tr>
<td>21 - 25</td>
<td>2</td>
</tr>
<tr>
<td>16 - 20</td>
<td>0</td>
</tr>
<tr>
<td>11 - 15</td>
<td>5</td>
</tr>
<tr>
<td>6 - 10</td>
<td>5</td>
</tr>
<tr>
<td>5 and less</td>
<td>14</td>
</tr>
<tr>
<td>Unable to answer</td>
<td>11</td>
</tr>
</tbody>
</table>

Comments: Mostly filling in forms. Unable to estimate; varies greatly during the month.
Basis for Measuring Performance. The data of Table VII present the basis which employers used in measuring performance on the job. The majority of employers, 84 percent, used performance on the job as a basis of evaluation. The remaining 16 percent stated that they used words per minute as a basis,

### TABLE VII

**BASIS FOR MEASURING PERFORMANCE ON THE JOB**

**AS INDICATED BY THIRTY-TWO EMPLOYERS**

<table>
<thead>
<tr>
<th>Basis</th>
<th>Number of Businessmen</th>
<th>Percent of Total Number Responding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfactory Performance on the Job</td>
<td>27</td>
<td>34</td>
</tr>
<tr>
<td>Words-per-minute Basis</td>
<td>5</td>
<td>16</td>
</tr>
<tr>
<td>Number of Average Length Letters Per Day</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

although they gave no explanation as to how they determined such a rate.

**Ability of High School Graduates to Meet Office Standards.**

When asked whether the high school student had been able to meet their employment standard, 66 percent replied that the high school graduate was able to perform satisfactorily. Several employers, however, commented upon the adjustment factor which beginning workers face. Ten percent of the employers stated
TABLE VIII
OPINIONS OF FORTY-ONE BUSINESSMEN REGARDING ABILITY OF HIGH-SCHOOL-TRAINED EMPLOYEES TO MEET OFFICE PERFORMANCE STANDARDS

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>27</td>
<td>66</td>
</tr>
<tr>
<td>No</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>Unable to answer</td>
<td>10</td>
<td>24</td>
</tr>
</tbody>
</table>

Comments: Adjustment on beginning job—motivation to learn things you can't teach in school. 2
Learn to measure benefit in terms of experience and value in addition to monetary value. 2
No, not in a legal office 2
Yes, except for spelling 1
Yes, considering lack of experience 1
Lack of ability to follow directions 1

that the high school graduate was not able to meet their levels of performance. Twenty-four percent replied that they were unable to answer.

Areas of Weakness. The data in Table IX present a summary of the opinions of employers when asked to list areas of weakness.

In the area of basic skills, 43 percent indicated a weakness in spelling while 41 percent pointed out a weakness in vocabulary and word usage. Thirty-one percent stressed a need for improvement in the art of answering the telephone.
The areas of grammar, punctuation, and arithmetic were listed by 27 percent of the respondents.

In the area of typewriting, more than half of the interviewees, 54 percent, reported a lack in the ability to proofread. More than one-fourth of the employers indicated a high rate of strikeovers (29 percent) and a lack of ability for composition (27 percent). Approximately one-fifth indicated that typographical errors were common. Between 10 and 15 percent indicated weaknesses in the balance and placement of material and in the ability to type numbers. The following areas were listed by less than 10 percent: legible carbons, addressing of envelopes, typing of tabulations, omissions, and incorrect syllabication.

In the area of transcription, 35 percent reported a loss in the meaning of dictation when transcribed by new employees. A little more than one-fourth (27 percent) reported messy erasures and failure to use reference books when necessary. Of the 17 percent who commented on waste of supplies, some businessmen admitted that the waste was not always the stenographer's fault. Less than 10 percent reported that the quantity of work (output) was low.

Approximately one-fourth of the employers reported a lack of confidence by the stenographer in her notes. Seventeen percent reported that the employee did not verify her notes when she was in doubt.
TABLE IX
FREQUENCY AND PERCENT OF AREAS OF WEAKNESSES
INDICATED BY FORTY-ONE BUSINESSMEN

<table>
<thead>
<tr>
<th>Area</th>
<th>Frequency</th>
<th>Percent of Total Number Surveyed</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Basic Skills:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spelling</td>
<td>18</td>
<td>44</td>
</tr>
<tr>
<td>Vocabulary and Word Usage</td>
<td>17</td>
<td>41</td>
</tr>
<tr>
<td>Use of Telephone</td>
<td>13</td>
<td>32</td>
</tr>
<tr>
<td>Grammar</td>
<td>11</td>
<td>27</td>
</tr>
<tr>
<td>Punctuation</td>
<td>11</td>
<td>27</td>
</tr>
<tr>
<td>Arithmetic</td>
<td>11</td>
<td>27</td>
</tr>
<tr>
<td>Penmanship</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Self Expression</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>Typewriting:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proofreading</td>
<td>22</td>
<td>54</td>
</tr>
<tr>
<td>Strikeovers</td>
<td>12</td>
<td>29</td>
</tr>
<tr>
<td>Composition</td>
<td>11</td>
<td>27</td>
</tr>
<tr>
<td>Typographical Errors</td>
<td>9</td>
<td>22</td>
</tr>
<tr>
<td>Balance and Placement</td>
<td>6</td>
<td>15</td>
</tr>
<tr>
<td>Numbers</td>
<td>5</td>
<td>12</td>
</tr>
<tr>
<td>Legible Carbons</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>Addressing Envelopes</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>Tabulations</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Omissions</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Incorrect Syllabication</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>Transcription:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Losing Meaning of Dictation</td>
<td>14</td>
<td>34</td>
</tr>
<tr>
<td>Messy Erasures</td>
<td>11</td>
<td>27</td>
</tr>
<tr>
<td>Use of Reference Books</td>
<td>11</td>
<td>27</td>
</tr>
<tr>
<td>Waste of Supplies</td>
<td>7</td>
<td>17</td>
</tr>
<tr>
<td>Output (quantity)</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td><strong>Dictation:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Confidence in notes</td>
<td>11</td>
<td>27</td>
</tr>
<tr>
<td>Verification of notes when in doubt</td>
<td>7</td>
<td>17</td>
</tr>
</tbody>
</table>
Comments: Telephone--speaking distinctly and cultivating a pleasant and personable voice; as initial contact, very important. 5
Lack of confidence and losing meaning of dictation--girls just out of school only. 2
Necessity of becoming acquainted with office vocabulary; need of broad vocabulary 2
Output--quality, yes; quantity, no 2
Understand whole business arithmetic cycle. 1
Lack of capacity for self expression 1
Ability to type numbers; very important; mistakes are disastrous 1
Waste of supplies--not always girl's fault 1
Ability to recognize what she can postpone. 1

Office Machines in Use. The data of Table X present the office machines in use. The manual typewriter was used by all employers. More than 40 percent indicated use of the mimeograph (46 percent) and the ten-key adding machine (41 percent). Approximately one-third of the respondents indicated a need for the skill on the full-key adding machine (39 percent), the duplicator and voice recording machines (34 percent), and the rotary calculator (31 percent). About one-fifth of the employers used electric typewriters and bookkeeping machines in their offices. Approximately 10 percent of the employers used copy machines and addressing machines. Less than 5 percent listed the following: key-driven calculator, posting machine, intercommunication system, billing machine, and automatic mailing devices.
## TABLE X

**TYPES OF OFFICE MACHINES USED**

**IN FORTY-ONE OFFICES**

<table>
<thead>
<tr>
<th>Type of Machine</th>
<th>Number of Offices Reporting Use</th>
<th>Percent of Total Number Responding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual Typewriter</td>
<td>41</td>
<td>100</td>
</tr>
<tr>
<td>Mimeograph</td>
<td>19</td>
<td>46</td>
</tr>
<tr>
<td>Ten-key Adding Machine</td>
<td>17</td>
<td>41</td>
</tr>
<tr>
<td>Full-key Adding Machine</td>
<td>16</td>
<td>39</td>
</tr>
<tr>
<td>Duplicator</td>
<td>14</td>
<td>34</td>
</tr>
<tr>
<td>Voice Recording Machine</td>
<td>14</td>
<td>34</td>
</tr>
<tr>
<td>Rotary Calculator</td>
<td>13</td>
<td>32</td>
</tr>
<tr>
<td>Electric Typewriter</td>
<td>9</td>
<td>22</td>
</tr>
<tr>
<td>Bookkeeping Machine</td>
<td>8</td>
<td>20</td>
</tr>
<tr>
<td>Copy Machine</td>
<td>5</td>
<td>12</td>
</tr>
<tr>
<td>Addressing Machine</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>Key-driven Calculator</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Posting Machine</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Intercommunication System</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Billing Machine</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Automatic Mailing Device</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

**Comments:** Voice recorder, girls won't use it.
Other comments which were made by employers regarding past experiences were:

Interest, attitude, sensitivity
Developing sense of loyalty.
Responsibility to do job no matter what the time.
If she feels all she is getting paid for is to type, she is wrong.
Sense of responsibility regarding value of the job.

Use of common sense
Failure to act causes more trouble than to act and have to correct it later.
If businessman must supervise every detail, he might as well do it himself.
Reason for hiring is to have people to do the job for you.

Confidential nature of the office
Less than two years of training inadequate
Prefer experience, legal
Never had a girl who could file

Summary. The following points are presented as a summary of the findings of the study.

1. Employers in the selected Missoula business firms hire on a provisional basis rather than by specific skill requirements.

2. Of the specific requirements given, the typewriting rate ranged from 40 to 60 words per minute with a midscore of 50 words per minute. The dictation rate ranged from 80 to 120 words per minute with a midscore of 100 words per minute. No transcription rate requirement was given.

3. On the basis of the timed writing given to stenographers employed at the time of the interview, a range from 30 to 75 words per minute was found with a midscore of 53 words per minute. Fifty-eight percent typed at a rate of 50 words per minute or higher while 45 percent were able to type at speeds exceeding 55 words per minute.
4. The respondents were rather evenly divided upon the desirability of the construction of a test to meet the needs of the Missoula area. Thirteen interviewees were in favor of such a test while twelve were opposed and seven gave no response. This seems to imply that the businessmen found their existing methods of employment satisfactory.

5. In three-fourths of the offices, the number of letters typed in an average day was fifteen or less, and 45 percent of the offices produced five or less daily. These responses suggest that the stenographers in the offices of the selected business firms spend a majority of their time performing many other duties since the time necessary for the preparation of fifteen or less letters would constitute a small portion of the day.

6. Areas of weaknesses reported by 20 percent or more of the businessmen were:

<table>
<thead>
<tr>
<th>Basic Skills</th>
<th>Spelling</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Vocabulary and Word Usage</td>
</tr>
<tr>
<td></td>
<td>Use of the Telephone</td>
</tr>
<tr>
<td></td>
<td>Grammar</td>
</tr>
<tr>
<td></td>
<td>Punctuation</td>
</tr>
<tr>
<td></td>
<td>Arithmetic</td>
</tr>
<tr>
<td>Typewriting</td>
<td>Proofreading</td>
</tr>
<tr>
<td></td>
<td>Strikeovers</td>
</tr>
<tr>
<td></td>
<td>Composition</td>
</tr>
<tr>
<td></td>
<td>Typographical Errors</td>
</tr>
<tr>
<td>Transcription</td>
<td>Losing Meaning of Dictation</td>
</tr>
<tr>
<td></td>
<td>Messy Erasures</td>
</tr>
<tr>
<td></td>
<td>Use of Reference Books</td>
</tr>
<tr>
<td>Dictation</td>
<td>Lack of Confidence in Notes</td>
</tr>
</tbody>
</table>

7. Office machines in use by 20 percent of the employers or more were the manual typewriter, mimeograph, ten-key adding machine and full-key adding machine, duplicator, voice recording machine, rotary calculator, and the electric typewriter.

8. Performance on the job was measured in terms of satisfactory performance by 84 percent rather than in terms of a particular rate or specific output per day.
9. In the opinion of 66 percent of the employers, the high-school-trained employee was capable of performing satisfactorily on the job.

10. Although the analysis of personality traits was outside the scope of this study, there are indications that the development of desirable personality traits has been weak and that further study in this area is needed.
CHAPTER IV

CONCLUSIONS AND RECOMMENDATIONS

The Problem. The purposes for undertaking this study were as follows:

1. To determine the basis of initial employment of stenographers.
2. To discover from each employer whether some form of employment test was used.
3. To determine skill requirements for the initial job.
4. To resolve the most common deficiencies observed in new employees regarding mechanical skills.
5. To determine the kinds of business machines commonly used and considered desirable by businessmen in the Missoula area.
6. To find out whether, in the opinion of the businessman, the school was providing graduates with adequate vocational training.
7. To elicit subjective comments from the respondents which would be of use in improving the preparation of students and in understanding the problems of the office.

Conclusions.

1. Businessmen in the selected Missoula offices hire on the basis of probational employment for the most part. Limited use of skill requirements was found in the study.
2. As learning standards, the indication exists that standards may be adopted, based on current reading and the findings of this study.

3. Missoula employers are satisfied with their method of hiring employees. An employment test for the area is not needed nor desired at this time.

4. Sixty-six percent of the employers indicated that the high-school-trained employees were capable of meeting their performance standards. With improvement in the areas of weakness, the success of high school graduates could be improved in the future.

5. Because the employers indicated that two-thirds of the high school graduates were able to meet job performance standards but recommended a number of areas in which improvement could be made, the implication may be drawn that the high school graduates have been trained sufficiently in the basic skills but lack the ability to transfer the training to the office situation.

6. Because Missoula offices use a variety of office machines, the implication may be made that training on the most commonly used machines should be included for all students in the terminal training course.

7. Although the analysis of personality traits was outside the scope of this study, a study in this area in the future may point out other problems of the beginning worker.
Recommendations. The following recommendations are made in view of the findings and conclusions previously presented in this study.

1. The data would seem to indicate that the following minimum standards are desirable as learning standards for the terminal stenographic training course at the end of the second year:

   Typewriting rate: 50 net words per minute

   Shorthand dictation: 100 words a minute, five minutes
                      110 words a minute, three minutes
                      80 words a minute, letters,
                      office-style dictation

   Transcription rate: 15 words a minute, letters
                      20 words a minute, dictation
                      given at constant speeds.

2. Desirable goals for the superior student would seem to be:

   Typewriting rate: 55 net words per minute

   Shorthand dictation: 120 words a minute, five minutes
                      140 words a minute, three minutes
                      100 words a minute, letters,
                      office-style dictation

   Transcription rate: 20 words a minute, letters
                      25 words a minute, dictation
                      given at constant speeds.

3. Office machines should be included as part of the terminal course with particular emphasis on the mimeograph, ten-key and full-key adding machines, duplicator, voice recording machines, the rotary calculator, and the electric typewriter.

4. To facilitate the transfer of training to the office, more emphasis should be placed upon simulated job production
stressing accuracy and acceptability of the finished product, with particular emphasis on the following areas of weakness:

Basic Skills:  
- Spelling  
- Vocabulary and word usage  
- Use of the telephone  
- Grammar  
- Punctuation  
- Arithmetic

Typewriting:  
- Proofreading  
- Strikeovers  
- Composition  
- Typographical errors

Transcription:  
- Losing meaning of dictation  
- Messy erasures  
- Use of reference books

Dictation:  
- Lack of confidence in notes

Further Study.

1. A similar study of students who have been trained in stenography at Missoula County High School may reveal additional employment problems from the employee's standpoint. Such a study would make possible a further evaluation of the present training program.

2. Periodic studies should be made in the future to determine the progress of the training program and to keep abreast of the needs of the community.

3. The possibility exists that the development of the employable personality may have been neglected on the local level. A study in the area would be helpful in determining problems involving personality failures of beginning stenographic workers.
A. BOOKS


B. PUBLICATIONS OF THE GOVERNMENT AND LEARNED SOCIETIES


C. PERIODICALS


D. UNPUBLISHED MATERIALS


E. OTHERS

APPENDIX A

LETTER OF TRANSMITTAL
Missoula, Montana

Dear Sir:

Under the guidance of the School of Education at Montana State University and Mr. D. H. Beary, I am making a study of employment standards in the Missoula area, with the hope that we shall be able to evaluate our program and provide the type of program desired by the community for prospective stenographic employees.

Your firm has been chosen to participate because you have been so co-operative with us on our stenographic part-time work program at some time during the past four years.

I am enclosing an Interview Guide which I shall use in interviewing. All of the questions will not necessarily pertain to every businessman. Basically, I am interested in the standards you would expect of a beginning stenographic employee; in addition, I am interested in the areas where improvements can be made.

In item 15, you will see that I am asking for information regarding the number of letters typed per day. If possible, I would like to have your stenographer or secretary pick an average day and count the number of pieces of correspondence she typed that day. Item 14 relates to a 5" timed writing. I would appreciate the opportunity to give your stenographer or secretary a typing test in order to determine the average rate of girls now employed. If this is not possible at the time of the interview, I shall be happy to arrange a time convenient to you and to your employee at a later date.

All information will be confidential. At no time will a businessman or business firm be identified by name.

Some time during the next few months, I shall call in advance and arrange for an appointment at a time convenient to you. I shall appreciate your help and shall make every effort to take a minimum amount of your time.

Sincerely yours,

(Miss) Mary Riley
Missoula County High School

Enclosure
Endorsed by:

Linus J. Carleton, Dean
School of Education
Montana State University

D. H. Beary, Principal
Missoula County High School
APPENDIX B

INTERVIEW GUIDE
Business Interview Guide

1. Name of organization .................................................................

2. Name and title of person interviewed ........................................

3. Do you use tests for employment purposes? .... Yes No
   a. If so, what type:  Typing Test ............................................
      Shorthand Dictation ......................................................
      Others: (List) ...............................................................

   b. If answer to No. 3 was No, on what basis do you hire prospective employees?
      1. Word of Applicant ......................................................
      2. References Given .....................................................
      3. Teacher trainer .........................................................
      4. Others .................................................................

4. Do you prefer to measure the performance of workers
   On a words-per-minute basis .............................................
   Or
   On a certain number of average length letters typed within a certain period of time? ........

5. Do you use a standard typing requirement for beginning employees? If so, what type? Yes No
   a. straight copy
      71 & over
      66 - 70
      61 - 65
      56 - 60
      51 - 55
      46 - 50
      41 - 45
      36 - 40
      31 - 35
      30 & under
b. letters, copying rate

On what basis do you figure rates?

Gross words per minute
Correct words per minute
Net words per minute

6. Do you use a standard transcription requirement?  
Yes  No

If answer is yes, on what basis?

a. manuscript rate .................. 46 & over
41 - 45
36 - 40
31 - 35
26 - 30
21 - 25
20 & under

b. letters rate ...................... 41 & over
36 - 40
31 - 35
26 - 30
21 - 25
16 - 20
11 - 15
10 & under

C. letters, output per day ............ 41 & over
36 - 40
31 - 35
26 - 30
21 - 25
16 - 20
11 - 15
6 - 10
5 & less
7. Do you require a minimum shorthand dictation rate? Yes No
140
130
120
110
100
90
80
70 & under

8. Do you feel the high-school-trained employees have been meeting your employment standard? Yes No

9. In general transcription abilities, which areas do you feel need to be stressed? Mark with a check those areas which need improvement.

Fundamentals of arithmetic

Fundamentals of English:
  Spelling
  Grammar
  Punctuation
  Vocabulary & word usage

Fundamentals of typewriting:
  Strikeovers
  Balance & Placement
  Incorrect syllabication
  Typographical errors
  Proofreading
  Tabulations (statistical)
  Ability to type numbers correctly
  Legible carbons
  Composition, letters
  Addressing Envelopes
  Others: (List)
Fundamentals of transcription:
  Losing meaning of dictation ..............
  Messy erasures ........................................
  Waste of supplies, retyping, etc. .......
  Use of reference books when necessary ..
  Output (Quantity) ...............................
  Others: (List) .....................................

Fundamentals of dictation:
  Verification of numbers and symbols when in doubt ..........................................
  Confidence in notes ...............................
12. Would you, as a businessman, like to have a test constructed for use as an instrument to measure skills of prospective employees in the Missoula area?  

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

13. Five minute straight-copy typewriting test, net words per minute basis

<table>
<thead>
<tr>
<th>71 &amp; over</th>
<th>66 - 70</th>
</tr>
</thead>
<tbody>
<tr>
<td>61 - 65</td>
<td></td>
</tr>
<tr>
<td>56 - 60</td>
<td></td>
</tr>
<tr>
<td>51 - 55</td>
<td></td>
</tr>
<tr>
<td>46 - 50</td>
<td></td>
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<tr>
<td>41 - 45</td>
<td></td>
</tr>
<tr>
<td>36 - 40</td>
<td></td>
</tr>
<tr>
<td>31 - 35</td>
<td></td>
</tr>
<tr>
<td>30 &amp; under</td>
<td></td>
</tr>
</tbody>
</table>

14. Number of letters produced in average day:

<table>
<thead>
<tr>
<th>41 &amp; over</th>
<th>36 - 40</th>
</tr>
</thead>
<tbody>
<tr>
<td>31 - 35</td>
<td></td>
</tr>
<tr>
<td>26 - 30</td>
<td></td>
</tr>
<tr>
<td>21 - 25</td>
<td></td>
</tr>
<tr>
<td>16 - 20</td>
<td></td>
</tr>
<tr>
<td>11 - 15</td>
<td></td>
</tr>
<tr>
<td>6 - 10</td>
<td></td>
</tr>
<tr>
<td>5 &amp; less</td>
<td></td>
</tr>
</tbody>
</table>