

A SURVEY OF JOB REQUIREMENTS FOR OFFICE WORKERS
IN THE BAYTOWN, TEXAS AND HOUSTON SHIP CHANNEL AREA

by

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A THESIS

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A SURVEY OF JOB REQUIREMENTS FOR OFFICE WORKERS
IN THE BAYTOWN, TEXAS, AND HOUSTON SHIP CHANNEL AREA

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CHAPTER I

INTRODUCTION

One of the primary objectives of business education is to prepare students to be competent business employees. The demands of employers for proficiency in employees emphasizes the importance of this objective. An efficient business teacher must be constantly alert to changes that are occurring in business in order to meet the demands of modern business in the community, to possess the knowledge of available jobs, and to know the requirements of the jobs that are available.

Numerous sources of information are available regarding job opportunities and requirements. A community survey can be a desirable aid in establishing standards of achievement, revisions of curriculum, replacement of and additions to equipment.

Statement of the Problem

The problem of this study was to survey the requirements of selected industries for beginning office workers and in view of the requirements, to evaluate standards of achievement in the business subjects in the Barbers Hill High School at Mont Belvieu, Texas, in order to make recommendations as to possible changes in curriculum and/or subjects taught.

Sub-problems are these: (1) to secure data concerning employment tests given to applicants for office work; (2) to identify weaknesses in skills, abilities, and personal traits of applicants and beginning workers; (3) to compile as nearly as possible the actual requirements of different industries for office personnel; (4) to evaluate present requirements in the Barbers Hill High School business education courses; and (5) to make recommendations for changes in present standards, or additions to the curriculum.

Purpose of the Study

The primary purpose of the study was to gain information to be utilized in the training of business education students so that they might secure and successfully maintain positions in the competitive business world of today. An essential element of vocational business education is the knowledge of what will be required of students when they become applicants for office jobs. If job requirements are known, the teacher can set goals for classes and students can set individual goals of achievement.¹

Secondary purposes: (1) to make available to business education students information concerning the types of

¹Benjamin R. Haynes and Clyde W. Humphrey, Research Applied to Business Education (New York: The Gregg Publishing Company, 1939), p. 59.

office jobs and the requirements of each job obtainable in the area, and (2) to emphasize the factors other than skills which are so very important in determining the acceptability of an applicant for a position.

Hypotheses

1. The standards observed in the Barbers Hill High School are similar to those of all secondary schools offering business education.

2. Official accrediting associations for all secondary schools offer evaluating criteria for course offerings and instructional staff.

3. Since surveys are required for the most reliable evaluations of business education, and since Barbers Hill High School has not conducted one, a survey at the present time should aid the school and the staff member making the survey.

Definition of Terms

Definition of terms as used in this survey are these:

1. Employer refers to the firm to which questionnaires were sent, and who responded. The 20 firms responding to the questionnaires included: fourteen chemical industries; four oil and chemical companies; one natural gas transmission firm; and one manufacturer of fibre and steel drums.

2. Employee refers to an office worker whose duties are those associated with an accountant, analyst, bookkeeper, clerk, machine operator, receptionist, secretary, stenographer, typist, apprentice clerk, messenger girl, purchasing agent, and office supervisor.

Limitations of the Study

This study was limited to the area along the Houston Ship Channel and in the vicinity of Baytown, Texas. It was limited to 20 selected oil and chemical industries which were located in this area. The Manned Spacecraft Center of the National Aeronautics and Space Administration at Clear Lake City, Texas, was, however, included in the study as it was felt that information concerning the Civil Service testing program and requirements, as it applies to personnel at the Center, would be of value to the study.

The study was further limited to the testing of applicants for office jobs, and to the standards for shorthand and typewriting set up by each firm for initial employment of office workers. Included in this category were stenographers, secretaries, receptionists, clerks, typists, bookkeepers, accountants, and shipping and receiving clerks. Some industries did not distinguish between accountants and bookkeepers, nor between typists and clerks; however, the difference will be shown whenever possible in this study.

Method of Investigation

The questionnaire method of investigation was used, along with three personal interviews with personnel directors known to the investigator. The structured form of the questionnaire was used with the selection type of items, so that the respondent had a choice of answers, and in most instances, had only to check blanks. Questionnaires, shown in Appendix A, were mailed to 25 firms, addressed to the personnel director. With each questionnaire was a letter of explanation, shown in Appendix B, and attached to each letter was a dime, with the suggestion that the personnel director have a cup of coffee while answering the questionnaire. A stamped, self-addressed, return envelope was enclosed.

Most authorities agree that the personal interview method is the best procedure to follow in making a survey. Interviews are preferred to the mailed questionnaire in that the interviewer can better explain the purpose of the survey and answer any questions which may arise.² However, the mailed questionnaire was relied upon in this survey because of the difficulty in obtaining personal interview time. The value of such a survey is confirmed by competent authorities.

²R. G. Walters, The Community Survey (Dallas: South-Western Publishing Company, 1942), p. 10-11.

A survey, in whatever form it is made, may result in recommendations for changes in curriculum, in equipment, in guidance work, or in placement work; however, a survey may show that present conditions in the high school are quite satisfactory to the business community and few changes need to be made.³

Sources of Data

The primary source of data was the information gained from the 20 industries contacted through interviews and questionnaires.

A map, shown in Appendix C, was obtained from the Greater Baytown Chamber of Commerce which shows all manufacturing, oil, and chemical plants in the area with at least twenty-five or more employees. The map also shows NASA, which is the area occupied by the Manned Spacecraft Center of the National Aeronautics and Space Administration at Clear Lake City, Texas. The oil and chemical industries that replied to the questionnaires or granted the interviews, are circled in red. This sample represented typical Baytown and Ship Channel industries and included firms which offered employment to a total of 590 office workers.

Secondary sources of data include: business-education periodicals; yearbooks; classroom business reference books;

³R. G. Walters and C. A. Nolan, Principles and Problems of Business Education (Dallas: South-Western Publishing Company, 1950), p. 309.

Managerial Psychology by Dr. Loyce Adams; The Elements of Research by Frederick Lamson Whitney; a publication of The Texas Employment Commission, Manpower Patterns Through 1966 in an Eight-County Houston-Gulf Coast Area, which was published in cooperation with Chambers of Commerce in the eight-county area, December, 1962; and other books and textbooks, all of which are listed in the bibliography. Other secondary sources of data include business education pamphlets, civil service bulletins, and pamphlets.

Background Information About Barbers Hill High School

Located in the oil field town of Mont Belvieu, Texas, the Barbers Hill High School sits atop the world's largest salt dome. Around the lip of the dome the oil wells form a distinct circle. The salt dome's physical characteristics make it ideal in providing underground storage facilities. The Independent School District includes various oil and chemical industries, pipe-line concerns, large rice farms, and ranches. Bounded on the east by the Trinity River and on a portion of the west by Cedar Bayou, the Barbers Hill School District reaches south to the Trinity Bay. The school is only eight miles from the Baytown and Ship Channel area and is included in the "dynamic industrial complex" which will make available many more jobs in the next few years.⁴

⁴Manpower Patterns Through 1966 in the Eight-County Houston-Gulf Coast Area (Published by the Texas Employment Commission, December, 1962), p. 6.

The present high school building was erected in 1930. Now inadequate, the building includes only eight classrooms, a library, two offices, and an auditorium. The average enrollment for the past five years has been 175 for grades nine through twelve inclusive. However, much growth is expected in the immediate future because of industrial growth of the area.

Other than required courses, the curriculum of the high school now includes: three years of vocational home economics, automobile mechanics, shop, agriculture, two years of speech, two years of Spanish, advanced science, world geography, physics, trigonometry, business arithmetic, two years of typewriting, one year of shorthand, and one year of bookkeeping.

All business classes meet in the same room which has only typewriter desks with no separate facilities for shorthand and bookkeeping. One teacher is responsible for all business classes with the exception of business arithmetic, which is taught by a mathematics teacher. The standards set up for the typewriting and shorthand courses are these: Typewriting I, 35 to 55 GWPM on five-minute timed tests with no more than three errors; Typewriting II, 55 to 65 GWPM with no more than two errors on five minute-timed tests; Shorthand I, 60 to 80 words per minute for five minutes with 95 per cent accuracy on new material. Production tests are also given in the typewriting classes. Most students are permitted to pass Typewriting I if they do acceptable work, even though they can

not meet the speed requirements, but may not enroll for Typewriting II. The last three weeks in shorthand are spent on the transcription of mailable letters. The best students attain higher speeds than 80 words per minute in shorthand. Students may enroll in Typewriting II and shorthand even though they are not interested in vocational training, because of insufficient electives offered. Bookkeeping standards and objectives, shown in Appendix D, are given at the beginning of the course. Only those students who meet the objectives satisfactorily receive credit. The requirements of the business department of Barbers Hill High School are adequate when compared to those of the Texas Education Agency, in Appendix D.

A new high school now under construction should be completed by 1968. The building was planned for a capacity of 1000 students with room for expansion. The enrollment is expected to be 500 students within the next five years due to industrial growth of the community. The new school will contain proper facilities for all classes. This survey of job requirements will aid those who plan the business education program in setting up curriculum, equipment, and personnel.

Related Studies

To prepare students as competent business employees was the primary objective when business education first came

into the schools and is still the first objective of business education.⁵

Many studies have been made to determine what businessmen want in order to set up school curriculums that will meet business standards. The earliest surveys were conducted by city chambers of commerce. The survey in 1914 by the Boston Chamber of Commerce was the best of the early surveys. This survey was made to determine employers' opinions of business subjects most needed.⁶

Many other well-known studies throughout the nation were cited by Walters and Nolan. In 1946, the National Office Management Association and a committee representing the St. Louis public schools sent questionnaires to NOMA members to obtain information that office managers felt should be taught to further vocational training in office practice classes. A study was also made of the opportunities for employment in St. Louis offices. Recommendations were made regarding guidance, testing, placement, and follow-up programs.⁷

A survey of job requirements for typists made in Indianapolis, Indiana, in 1965, resulted in these findings: (1) letter style copy, 60 per cent; straight copy, 35 per cent, (2) manual machines, 75 per cent; electric machines, 15 per cent; choice, 10 per cent, (3) electric machines used in

⁵Walters and Nolan, op. cit., p. 21.

⁶Ibid., p. 309.

⁷Ibid.

stenographic pools, 85 per cent; part-time typists, 55 per cent manual typewriters, (4) 10 minute tests, 75 per cent, net words per minute; 25 per cent, 5 minute tests, net words per minute; (5) typewriting speeds for employment, 50 net words per minute, 39 per cent; 60 net words per minute, 28 per cent; 70 net words per minute, 9 per cent, for stenographic pools, (6) skills demanded with numbers, average, 10 per cent; above average, 15 per cent; superior, 75 per cent. Employers were very concerned because students lack ability to follow directions, lack ability to solve problems of unusual jobs, and do not realize the importance of proof-reading, economy, neatness, and the ability to relax.⁸

A recent study was made of 54 businesses in Houston, Texas, randomly selected, to obtain information on employment test requirements for beginning typists. Half of the companies reported that they used employment agencies to do their testing. Straight copy material was used by 60 per cent of the companies who did their own testing. All of the employment agencies contacted, gave straight copy tests. Forty per cent of the company tests were 10 minutes long, scored by net words per minute. Thirty per cent of the company tests were five minutes long, scored by net words per

⁸John D. Lee, "A Survey of Job Requirements For Typists," Typewriting News, Vol. XXXVI, (Spring, 1966), p. 7.

minute, most of these being given by large companies. Fifty per cent of the large companies, 100 or more employees, required applicants to take the test on an electric typewriter. Only twelve per cent gave tests on a manual typewriter. Sixty-seven per cent of the small, one through 49 office workers, and medium companies, 50 through 90 employees, gave tests on the electric typewriter.⁹

Libraries at Sam Houston State College in Huntsville, Texas, and The University of Houston, Houston, Texas, contain copies of dissertations and theses which are related to this survey in that they are occupational and community surveys made in different cities. At the University of Houston, a survey of business firms was made by Woodrow Watts in 1949 for a doctor's thesis. This survey was to be a basis for recommending changes in the high school curriculum. Mr. Watts found high school business graduates weak in business arithmetic and spelling.¹⁰

Several very successful surveys have been conducted through the Business Department of Sam Houston State College. A survey of Huntsville, Texas, office workers was made in 1957 by James E. Gilmore. He found that accuracy, following instructions, neatness in work, courtesy, and loyalty were

⁹Kay Newman, "Typing Employment Tests, What To Expect," Typewriting News, Vol. XXXVI, (Spring, 1966), p. 2.

¹⁰Woodrow Watts, "A Commercial Occupational Survey of One Hundred Selected Business Firms of Houston, Texas, As a Basis for Recommending Changes in the High School Curriculum," Doctor's Thesis, University of Houston, 1949.

considered by employers as the most essential vocational traits for Huntsville office employees.¹¹

One of the most thorough surveys by a student at Sam Houston State College was done by Thelma Bounds in 1960. This study was made of office workers in Bryan and College Station, Texas, to gain information to be utilized to improve training of business students in the high school. Recommendations were that there should be closer cooperation between the school and the businessman, and that students should be given more occupational information. The findings of this survey included the statements that personal development needed more attention than could be given in regular class periods, and that measures should be taken to improve the local English program. Several studies made at the University of Texas, Austin, Texas, were cited in this survey that were similar in nature.¹²

Another survey worthy of note was made at Sam Houston State College by Eugene C. Janner of the office workers in Brenham, Texas. Weaknesses found in this study were in

¹¹James E. Gilmore, "A Survey of Huntsville Office Workers," Master's Thesis, Sam Houston State Teachers College, Huntsville, Texas, 1957.

¹²Thelma Bounds, "A Survey of Office Workers In Bryan and College Station, Texas," Master's Thesis, Sam Houston State College, 1960.

English grammar, spelling, and the ability to compose letters. This survey was made in 1962.¹³

An occupational survey was made in 1962 by the Texas Employment Commission in cooperation with the Chambers of Commerce in the eight-county Houston-Gulf Coast area of Brazoria County, Chambers County, Fort Bend County, Galveston County, Harris County, Liberty County, Montgomery County, and Waller County. This survey showed manpower patterns for a five-year period from 1962 through 1966, manpower needs of industries, and the supply of workers for that period. Mailed questionnaires, with personal follow-ups to selected non-respondents, were used for the collection of data from both employers and training agencies.¹⁴

Summary

The problem of this study was to survey the requirements of selected industries for beginning office workers and in view of these requirements, to evaluate standards of achievement in business education skill subjects in the Barbers Hill High School at Mont Belvieu, Texas, and to gain information

¹³Eugene C. Janner, "A Survey of Brenham Office Workers and Machines," Master's Thesis, Sam Houston State College, 1962.

¹⁴Manpower Patterns Through 1966 In The Eight-County Houston-Gulf Coast Area, (Published by The Texas Employment Commission), p. 69.

to be used in making recommendations pertaining to the business curriculum when the high school is moved into the new building which is now under construction and should be completed in 1968. The findings and recommendations of this survey may assist in the planning for facilities, curriculum, and personnel.

The study was limited to 20 selected oil and chemical industries along the Houston Ship Channel and Baytown, Texas, and the Manned Spacecraft Center at Clear Lake City. The Barbers Hill High School is within 25 miles of the industries used in the survey.

Data was obtained pertaining to personal qualities and abilities of importance to employers, kinds of employment tests available, and the kinds of tests used by the different firms. Information was obtained as to skill requirements for jobs in the different industries to determine how they compared with the requirements in the business-education department at Barbers Hill High School.

Recommendations were made for curriculum changes needed to strengthen the business-education department of the high school.

CHAPTER II

PERSONAL QUALITIES AND ABILITIES THAT ARE OF IMPORTANCE TO THE BUSINESSMAN

Today business teachers in high schools realize more than ever that theirs is a prodigious task. Not only must they encourage their students in the fundamental skills of typewriting, shorthand, bookkeeping, and clerical practice, but they must also convince them that other traits are often foremost in obtaining and holding office positions. Although basic business skills are necessary, employers consider certain personality and character traits of equal importance. Teachers must insist that students apply themselves in all areas to develop pleasing attitudes.

Personality

Employers expect to find proper attitudes, in addition to basic business skills, in high school graduates. In fact, most of the time they are

. . . not dissatisfied with the skills of shorthand, typewriting, and so forth with which beginning employees come to them. They frequently complain, however--and with some justification--about the lack of many traits that they have a right to expect¹

¹Leroy A. Brendel, "Let's Teach for Corollary Learnings In Typewriting," Business Education World, Vol. 43, No. 7, March, 1963, p. 62.

Many studies have been made to determine what employers value most in office employees. Most writers agree that attitudes and personality traits are of prime importance in clerical employment.² Personality, including poise and appearance, was the most important factor indicated in a survey of 225 companies made by Frank S. Endicott, director of placement, at Northwestern University.³

But "personality" is a somewhat ambiguous term. It can be stretched to cover all the attitudes, mental qualities, physical qualities, and character traits of an individual. However, in this study, the personality traits have been separated from character traits, using the popular concept of the term "personality."

A definition of the term "personality" as used by psychologists is "the composite of all skills, interests, abilities, and physical and mental characteristics which together give a person individuality."⁴ The popular concept of "personality," however, concerns only those outward qualities that attract and impress others. Included in these qualities are poise, friendliness, appearance, tact, willingness to cooperate with others, and a courteous and cheerful attitude.

²Harry Huffman (ed.), The Clerical Program in Business Education, p. 33.

³Loyce Adams, Managerial Psychology, (Boston: The Christopher Publishing House, 1965), p. 201.

⁴Huffman, op. cit., p. 37.

It is safe to say that outward personality is most important in the job interview. A neat and attractive appearance makes a good first impression. Indeed, poor taste in clothes or annoying mannerisms may disqualify an applicant immediately. Good manners should also be evident in the interview when the applicant should be "making every effort to impress the interviewer."⁵ More persons obtain positions and receive promotions because of personality factors than for any other reason.⁶

Although not all personality factors can be detected in an interview,

. . . the interviewer may note voice, attitudes, social traits, ability to talk, enthusiasm, and eagerness. He may try to detect neurotic tendencies from complaints, ability to concentrate on the matter at hand, and mental alertness.⁷

A survey of ten leading employers conducted in Columbus, Ohio, revealed that in addition to good professional skills, all employers listed "good personal appearance" among desirable qualities needed by a secretary. Ability to meet the public was another extremely essential quality. The interviewer advised secretaries to develop a well-rounded

⁵Adelord Blanchard, "Are Your Students Really Prepared?" The Journal of Business Education, Vol. XLI, No. 4, (January, 1966), p. 156.

⁶Harm Harms, Methods in Vocational Business Education, (New York: South-Western Publishing Company, 1949), p. 284.

⁷Loyce Adams, op. cit., p. 201.

personality by having a hobby, getting recreation, and keeping on with educational pursuits.⁸

The good secretary will continue to develop her personality. In an article called "Be-Attitudes For The Secretary," the writer advised secretaries to "be cheerful," "be calm," "be well groomed," and "be yourself," as well as to "be neat and accurate." She further admonished, "There's much to learn, and much to unlearn as far as personality problems in an office are concerned."⁹

Because employers see a need for improvement of the personal sides of their office workers, charm and personality courses have gained popularity, and many schools, especially business schools, now offer such courses. The courses certainly enrich the student's skill courses, and provide values applicable to both business and personal living.

Character

In the popular concept character and personality are considered separate entities. Character may be defined as that combination of moral qualities which distinguishes one person from another. These traits may be classified as

⁸Betty Kennedy Thomae, "Wanted: Secretaries Who . . .," Today's Secretary, Vol. 62, No. 8, April, 1960, p. 56.

⁹Virginia Gress, "Be-Attitudes For The Secretary," Today's Secretary, Vol. 62, No. 6, February, 1960, pp. 44+.

dependability, honesty, accuracy, initiative, and ethical standards. Although the interview may not reveal all these qualities of character, an employer will soon discover the desirable and undesirable traits of an employee.

The Public Relations Committee of the National Office Management Association, known as NOMA, made a nation-wide study of the importance of attitudes and personality traits. They used an opinion questionnaire in which some nine hundred office managers participated. The NOMA survey revealed that employers value dependability as the most important character trait of an employee. Other highly ranked traits were these: loyalty, honesty, trustworthiness, good judgment, common sense, poise, emotional stability, and initiative or resourcefulness. Both employers and employees contacted in the survey considered all of these character traits to be far more important than personal appearance, which is so often mentioned by educators and professional literature.¹⁰

In addition to the NOMA survey, many other studies have been made to discover what employers consider to be important personal and character traits of office employees. Related studies mentioned in the first chapter of this thesis were made for the purpose of determining what employers consider important.

¹⁰Huffman, op. cit., pp. 39-48.

Most of these have placed accuracy at or near the top of the list of personal and character traits. Other traits that have ranked high: dependability, responsibility, initiative, courtesy, appearance, cooperativeness, honesty, ability to follow directions, ability to communicate, punctuality, and mental alertness. . . . It will be noted that many of the traits valued most highly could not be adequately determined or observed through interviewing alone. Performance and other tests, transcripts of work, and references have to be used to get this information.¹¹

Although an employer may not be able to determine from an interview a potential employee's dependability, he can soon detect the presence or absence of this quality. A dependable employee will be prompt in arriving every morning for work, and in returning from lunch or coffee break. He will be honest in everything he does. If he makes a mistake, he will accept responsibility for the error, and will try harder to be extremely accurate. He will also take advantage of training courses and maintain a constant standard of good work.

Not only will he be dependable, but he will be loyal and discreet in dealing with confidential affairs. The personal secretary, in particular, is entrusted with secrets of an employer's private life and affairs. If that secretary

¹¹Adams, op. cit., pp. 207-208.

¹²David R. Dilley, "Job Hints For Your Students," Business Education World, Vol. 41, No. 5, January, 1961, p. 17.

treats these confidences properly, she will be admired and respected far more for her loyalty than for anything else.¹³

A business teacher has the responsibility for preparing students in the areas of personality and character. The teacher must help them develop attitudes of cooperation and dependability. The development of ethical standards may be accomplished by training them in efficient work habits.¹⁴ Significant as standards might be, it must be borne in mind that the mental attitude of the pupil is most important.¹⁵ One Houston, Texas, employment counselor indicated that immaturity is about equal to inferior skills when students fail to obtain or to hold the jobs that they seek.¹⁶

Emotional maturity can be achieved only through steadfast individual effort. Even the person who does work earnestly and consistently toward winning full adult status may fail to do so, because he has no clear picture of the objectives to be reached. The whole field of mental health has, in fact, suffered great neglect from parents, schools, and communications media.¹⁷

¹³Gress, op. cit., p. 43.

¹⁴Audrey Schmidt, "The Job-Hunting Season," Business Teacher, Vol. 43, No. 5, May-June, 1966, p. 18.

¹⁵William Selden and Robert D. Edwards, "Business Standards," The Balance Sheet, Vol. XLVIII, No. 3, p. 115.

¹⁶Gene Church Schulz, "Growing Up Emotionally," Today's Secretary, Vol. 68, No. 4, p. 28+.

¹⁷Ibid.

A person who is emotionally mature possesses the ability to be honest with himself and to accept his own imperfections, the ability to make decisions and to take responsibility, the ability to handle all emotions constructively, the ability to adapt to changing circumstances, a willingness to work and to wait for distant goals, and the ability to get along well with others.¹⁸

Abilities

The education of office workers must be both intensive and comprehensive. The businessman has a right to expect his employees to be well-trained, courteous, efficient, and able to get along with co-workers. Employers are especially interested in the abilities of potential office workers. The testing and placing of employees is expensive; therefore, personnel managers must be careful in the selection of employees.

The businessman has a right to expect accuracy as well as speed in typewriting. Many expensive time and motion studies within a company support the statement that production measurement is of vital importance. It has been estimated that it takes 26 seconds to correct one error. In many instances 50 words a minute without errors is more desirable than 60 words or more a minute with errors. The businessman

¹⁸Ibid.

also considers the ability to take dictation at a rate of 80 to 120 words a minute of great importance; however, this rate of dictation is meaningless unless the person can transcribe the shorthand at a reasonable rate of speed.

The business teacher is faced with students who are weak in spelling, English, and vocabulary. They cannot concentrate, follow directions, or write a clear sentence. They accept "average" as commendable and refuse to revise or proof-read.¹⁹

Certainly, the business student needs basic training in the tool subjects of mathematics and English, as well as typewriting, shorthand, and other business subjects. Business education, as much as any type of education, should strengthen the students in the fundamentals.

The eminent business educator, Paul S. Lomax, has pointed out that the educational value of what is taught in the classroom is really determined by how well students go out in life situations and use the knowledges, skills, ideals, and powers that are learned in the classroom.²⁰

¹⁹Sally Dorst, "The Secretarial Crisis--Whatever Happened To Quality?" Today's Secretary, Vol. 65, No. 7, March, 1963, p. 25.

²⁰Paul S. Lomax, Commercial Teaching Problems (New York: Prentice-Hall, Incorporated, 1932), p. 6.

Above all, it is imperative that students master the four basic tool-subjects of business--arithmetic, grammar, spelling, and typewriting. Every business occupation--whether it be stenographic work, the keeping of books, statistical work, one of the numerous kinds of clerical work, advertising, or selling--requires the use of these four tools in varying degrees.²¹

The teacher must work to improve these tool areas. The teacher must insist in every class period of every day of every year that students be prompt, thorough, dependable, creative, accurate, courteous, and respectful.²² A well-trained student with average mental ability can develop good professional skills.

A high school teacher must, indeed, prepare his or her students to compete in the business world. One businessman has stated that

. . . a well-prepared secretarial applicant is an A or B student with a pleasing personality who can write shorthand at the rate of 120 words per minute and type accurately at 60 words per minute. She must also reflect the attitudes that show that she desires to learn and improve.²³

It should be remembered that attitude and personality traits play an important part in determining the morale of a

²¹Walters, op. cit., p. 26.

²²Doris H. Crank, and Floyd L. Crank, "Imperatives In Planning The Secondary School Business Education Curriculum," The Balance Sheet, Vol. 40, No. 7, March, 1959, p. 343.

²³Blanchard, loc. cit.

company and they may affect the efficiency of personnel as much or more than technical skills or knowledges. Attitudes and personality traits should be considered equal to, if not more important than, any other factor for determining success in clerical work.²⁴

Summary

Although business skills are necessary in beginning workers in obtaining and maintaining an office position, certain personality and character traits are of equal importance. Many employers find business skills adequate, but they complain about the lack of personal traits which they consider essential.

Many studies have been made to determine what employers value in employees and most writers agree that attitudes and personality traits are of prime importance in clerical employment. Personality may be defined as "the composite of all skills, interests, abilities, and physical and mental characteristics which together give a person individuality." The popular concept of the term concerns only those outward qualities which attract and impress others. Included in these qualities are poise, friendliness, appearance, tact, willingness to cooperate with others, and courteous and cheerful attitude.

²⁴Huffman, op. cit., p. 35.

Personal appearance is most important in the job interview. The applicant should make every effort to favorably impress the interviewer by correct dress, manners, and conversation. The interviewer has been trained to acquire as much information as possible in a short time. He may be able to detect the good qualities as well as the undesirable qualities.

Character traits are the ethical qualities such as dependability, honesty, accuracy, and initiative. Of these traits, dependability is the most important, according to a nation-wide survey made by the National Office Management Association, in which some nine hundred office managers participated. Many other surveys have placed accuracy at the top of the list of importance. Whether or not an employee is dependable can soon be detected by an observant employer.

A business teacher has the responsibility for helping students develop the traits and personal qualities which are so important to their success as office workers. The businessman may expect his employees to be well-trained, courteous, efficient, and able to get along well with others. He may require his employees to possess minimum levels of skills in typewriting, shorthand, and other business knowledges. Most companies will accept applicants with skills of 50 to 60 words a minute with accuracy in typewriting, and 80 to 120 words a minute with accuracy in shorthand, if they pass the

the mental ability tests which are also required. A business student needs training in the tool subjects, arithmetic, grammar, spelling, typewriting, and shorthand, as well as he needs development in desirable attitudes and personality traits. The student must be assisted in the attainment of emotional maturity which can be developed only through steadfast effort and which is so vital in acquiring the abilities most needed by those who are to work with others.

CHAPTER III

EMPLOYMENT TESTS

Personnel managers of today have found it economical to screen their applicants by means of a testing program, despite the high cost of administering the tests. The use of tests, especially for initial employment, helps to determine the potential worth of new employees, replaces the costly trial-and-error methods formerly used, and guards against being misled by an attractive exterior.¹ "Properly used they justify the costs of testing in business offices, factories, and schools."² Tests enable the personnel director to measure typewriting and shorthand skill and general knowledge areas.³

One factor which has led to the increased use of tests in business and industry has been the wide use of tests by the Armed Forces. The United States Army tests thousands of volunteers and draftees each year with special proficiency tests that aim at covering some 800 types of jobs for enlisted

¹J. C. Aspley (ed.), The Dartnell Office Manager's Handbook, (3rd ed.), (Chicago: The Dartnell Corporation, 1964), p. 57.

²Loyce Adams, Managerial Psychology, (Boston: The Christopher Publishing House, 1965), p. 222.

³Arthelia V. Alexander, "Are We Preparing Students To Pass Placement Tests?" Business Education World, Vol. 42, No. 9, May, 1962, p. 28ff.

men.⁴ By far, the widest use of tests in business and industry today is for the initial selection of employees and the subsequent placement of those selected.⁵ An important problem of management is that of selecting the best qualified persons and giving them as much preliminary training as possible so that they will fit into their jobs, be satisfied in their work, and produce an adequate amount of work.⁶

In this study it was found that eighteen of the twenty employers, or 90 per cent of the participants, gave employment tests. These tests were composed of some or all of the following: shorthand, typewriting, general clerical ability, spelling, language ability, intelligence, and aptitude tests. The eighteen companies given here employed a total of 583 office workers. Two employers, or 10 per cent, did not give tests of any kind. However, one of the firms did indicate the requirement of a physical examination. These two companies employed eight office workers each, and a total of sixteen for the two companies. These employers said that for beginning office workers they would check on school records for typewriting and shorthand abilities, and for applicants with previous experience they would check with former employers.

⁴Adams, loc. cit.

⁵Lewis E. Albright, J. R. Glennon, and Wallace J. Smith, The Use of Psychological Tests In Industry, (Cleveland: Howard Allen, Inc., Publishers, 1963), p. 17.

⁶John W. Neuner, and Benjamin R. Haynes, Office Management and Practice, (2nd. ed.), (Dallas: South-Western Publishing Company, 1947), p. 480.

Table I shows the kinds of employment tests given, the number of employers using these tests, and the per cent of the 18 firms who gave tests. Eighteen, or 90 per cent of the employers gave employment tests; two, or 10 per cent of the firms gave no employment tests; six, or 33.4 per cent of the firms gave aptitude tests; fourteen employers, or 77.8 per cent, gave intelligence tests; seven, or 38.9 per cent, gave vocabulary or verbal tests; twelve, or 66.7 per cent, gave spelling tests; one, or 5.6 per cent, gave arithmetic tests; eighteen, or 100 per cent, of the employers who gave tests, gave typewriting tests; sixteen, or 88.9 per cent, gave shorthand tests; and none gave personality or interest tests. The firms that gave spelling and vocabulary tests did not indicate whether these tests were a part of other tests or whether they were given separately.

Kinds of Employment Tests

Tests are used in business and industry to predict success and to measure achievement. The tests may be prognostic or diagnostic. The prognostic tests predict success. Diagnostic tests measure achievement.⁷ These tests may be classified as intelligence, aptitude, interest, personality,

⁷Ibid., p. 506.

TABLE I
NUMBER AND PER CENT OF 18 FIRMS USING
CERTAIN EMPLOYMENT TESTS

Tests	Number	Per Cent
Aptitude	6	33.4
Intelligence	14	77.8
Vocabulary or Verbal	7*	38.9
Spelling	12*	66.7
Arithmetic	1	5.6
Physical	1	5.6
Typewriting	18	100.0
Shorthand	16	88.9

* All firms did not indicate whether these tests were included in those specifically named, or given as separate tests.

skill, knowledge, and/or achievement, and may be paper-and-pencil, oral, or performance tests.⁸

Intelligence, or mental ability, tests are prognostic tests which predict success. These are probably the most commonly used tests in industry, especially where job analyses as well as time and motion studies have been inaugurated, and where careful selection must be made of the probable success of applicants.⁹ Employers believe that a sufficient degree of mental ability is required to master the job, and to be able to adapt to changes in procedures.¹⁰

The first intelligence test was administered by Alfred Binet in 1905. The United States Army used the Alpha and Beta tests for general intelligence during World War I.¹¹ The vast number of intelligence tests used today has evolved from the early use by the United States Army.

Abstract intelligence, or mathematical and verbal ability tests are the most widely used by business and industry. However, these tests should be accompanied or supplemented by other tests, as they show only a certain capacity.¹²

⁸Adams, op. cit., p. 223

⁹Neuner, loc. cit.

¹⁰Albright, op. cit., 109.

¹¹Adams, op. cit., pp. 223-224.

¹²Ibid.

The Wonderlic Personnel Test is a short group test which is widely used in business, industry, and government. This test is available in five alternate forms: A, B, D, E, and F. Forms D, E, and F were developed from the Otis S-A Test; Forms A and B were developed by Wonderlic.¹³ Each test has fifty items which measure general ability with increasing difficulty in vocabulary, arithmetic, logic, and space relations. The test has a recommended time limit of 12 minutes.¹⁴ Two sample items from Form A are these:

Reap is the opposite of

1. obtain, 2. cheer, 3. continue, 4. exist,
5. sow ()

Minor Minor -- Do these words have

1. similar meaning, 2. contradictory, 3. mean
- neither same nor opposite ()

The Otis Self-Administering Test of Mental Ability contains some twenty items and requires from eight to thirty minutes to administer. It measures verbal skills, numerical reasoning, and logic.¹⁶

In this study fourteen employers reported that they gave intelligence tests although only four indicated the

¹³Ibid., p. 225.

¹⁴"Easy Does It With Tests," Today's Secretary, Vol. 69, No. 1, September, 1966), p. 30.

¹⁵Ibid.

¹⁶Ibid.

specific test used, the Wonderlic Personnel Test. Four of the industries included in the survey said that they used no intelligence tests, and two indicated that they gave no tests at all. One of the employers who reported giving no tests other than shorthand and typewriting, said that efforts were made in the personal interview to evaluate interest, aptitude, intelligence, and mental ability.

Aptitude tests show a person's potential ability or aptitude for a particular subject or occupation. The test measures knowledge, general abilities, and skills, such as mechanical ability, musical ability, language ability, or clerical ability. It is also a prognostic test which predicts probable success in a particular area or occupation, such as: teaching, engineering, clerical work, academic, nursing, or selling.¹⁷ Some of the tests which have been developed for measurement in this area are: pencil-and-paper and coordination tests. It is extremely difficult to distinguish between aptitude (potential) and achievement (accomplishment) insofar as mechanical processes are concerned.¹⁸ Some of the tests available in this area are these:

The Bennett Test of Mechanical Comprehension (Forms AA, BB, and CC) which is available from the Psychological

¹⁷R. G. Walters, and C. A. Nolan, Principles and Problems of Business Education, (Dallas: South-Western Publishing Company, 1950), p. 246.

¹⁸Albright, op. cit., p. 113.

Corporation, New York, "measures the ability to perceive and understand the relationship of physical forces and mechanical elements in practical situations."¹⁹

The Revised Minnesota Paper Formboard, from the Psychological Corporation, New York, has a long history of development and extensive usage. It has been praised for predicting success in mechanical shop work and in achievement in engineering jobs entailing drafting and design work.²⁰

Testing for clerical workers began even before World War I and has become increasingly important each year since. These jobs have advanced in numbers and in importance, and also the introduction of automation has accelerated the need of this type of testing which attempts to measure speed and accuracy in clerical performance.²¹

The Minnesota Clerical Test, also published by the Psychological Corporation of New York, can be traced as far back as 1933, and is still popular as a short, easily administered test of speed and accuracy in checking numbers and names.²²

The Purdue Clerical Adaptability Test, which is distributed by the University Press, requires approximately one hour and will measure seven skills or abilities, which include

¹⁹Ibid., p. 114.

²⁰Ibid.

²¹Ibid., p. 118.

²²Ibid., p. 119.

name and number checking, spelling, arithmetic computation and reasoning, memory for oral instructions, copying, and vocabulary.²³

The General Clerical Test, published by the Psychological Corporation, is a forty-three minute test which gives a measure of general mental ability. It tests clerical speed and accuracy, numerical ability, and verbal facility.²⁴

Relatively new tests used by the International Business Machine Corporation to measure aptitude for punched card machine operation are the Punched Card Machine Operator Aptitude Test and the Card Punch Aptitude Test.²⁵

Of the twenty oil and chemical industries responding to this survey, six reported that they did use aptitude tests. Two companies specified the use of the General Clerical Test, and two companies felt that the Wonderlic Personnel Test measured both intelligence and aptitude. Twelve of the 20 firms reported the use of no aptitude tests.

Interest tests reveal how the individual applicant's taste compares with that of successful people in given fields. It has been noted that there is a relationship between interest, ability, and aptitude. The time element is important in that predicting success over a long period of time depends

²³Ibid.

²⁴"Easy Does It With Tests," Today's Secretary, Vol. 69, No. 1, September, 1966, p. 30.

²⁵Albright, loc. cit.

more on interest than ability, whereas predicting success over a short period of time depends more on ability than interest.²⁶ Furthermore, a person may be interested in a subject but have no aptitude for the work, or he may possess aptitude for a subject but not enough interest to merit employment.

The Strong Vocational Interest Test (Stanford University) is a highly valid test for predicting success based on interest. The test does not determine mental ability or aptitude, and is usually given in conjunction with other tests.

The Kuder Preference Test (Duke University) is another widely used test for determining interest; however, this test does not give scores in specific subject areas. The results are shown on a profile chart that indicates degree of interest in ten different areas.²⁷

These tests may be given to high school students or college students. They are more reliable when given near employment age.

None of the 20 industries included in this survey reported the use of interest tests.

Personality is elusive and difficult to evaluate. Many

²⁶Adams, op. cit., p. 226.

²⁷Ibid., p. 194.

psychologists and business authors have levied valid and justified criticism of personality tests because of their misuse. It is easy for the respondent to "fake" what he believes to be desirable answers and thus give the test analyst a false impression of his personality. However, many personality tests designed to measure traits, such as emotional stability and personal relations, are being used with results being carefully validated.²⁸

The Bell Adjustment Inventory (Stanford University) is a test which attempts to evaluate home, health, social, emotional, and occupational adjustment. Other personality tests are these: Minnesota Multiphasic Personality Inventory (Psychological Corporation), Guilford-Zimmerman Temperament Survey (Sheridan Supply Company), and Bernreuter Personality Inventory (Stanford University Press).²⁹

Personality tests were not given by any of the 20 oil and chemical industries included in this survey.

Achievement tests attempt to determine the degree of knowledge and/or skills that have been developed. These tests are available to test skills acquired in vocabulary, spelling, reading, arithmetic, algebra, plane geometry, foreign languages, accounting, bookkeeping, shorthand,

²⁸Albright, op. cit., pp. 124-125.

²⁹Adams, op. cit., p. 232.

typewriting, use of adding machines and calculators, and other areas.³⁰

Some of the tests available in this area are these: Stanford Achievement Tests (World Book Company, Yonkers, New York), California Achievement Tests (California Test Bureau, Los Angeles), the Blackstone Stenographic Proficiency Test, and the Seashore-Bennet Stenographic Proficiency Test. The last two above mentioned tests are administered by dictation from records, the transcription of which is graded. The Blackstone test is composed of letters which can be used to measure knowledge of office practices such as English usage, alphabetizing, and abbreviating.³¹

Table I, page 32, shows that eighteen of the 20 oil and chemical industries included in this survey reported the use of typewriting and/or shorthand tests. Twelve of the concerns reported the use of spelling tests; one reported the use of an arithmetic test; and seven reported the use of vocabulary tests, or verbal ability tests. As has been mentioned before, two companies gave no tests at all.

Skill Requirements for Initial Employment

Table II shows typewriting standards for initial

³⁰Ibid., p. 235.

³¹Albright, op. cit., p. 119.

employment used by the eighteen employers in this survey who indicated the use of employment tests: the speed required, the number of firms using the same speed; the time limit of the test; whether net words per minute or the number of errors allowed; what type of machine used; and the kind of material to be typed, either straight copy or production.

One firm required a speed of 45 net words per minute for ten minutes on straight copy on either a manual or an electric machine; one firm required 50 net words per minute for ten minutes on an electric machine on straight copy. Five firms required 50 net words per minute for five minutes on an electric machine on straight copy. Two firms required 55 net words per minute for five minutes on either electric or manual machine on straight copy. Two firms required 55 net words per minute for five minutes on either electric or manual machine on production. One firm required 55 net words per minute for ten minutes with four errors allowed, on electric machine, and on production. One firm required 55 net words per minute for five minutes with two errors allowed, on an electric machine on straight copy. Two firms required 60 net words per minute for five minutes on an electric machine on production. One firm required 60 net words per minute for five minutes with five errors allowed, on a manual machine and straight copy. One firm required 65 words per minute for five minutes on an electric machine and straight copy; however,

TABLE II
SKILL REQUIREMENTS IN TYPEWRITING FOR INITIAL
EMPLOYMENT BY 18 EMPLOYERS

Firms	Speed	Minutes	Graded	Machines	Material
1	45	10	NWPM*	Either	Straight Copy
1	50	10	NWPM*	Electric	Straight Copy
5	50	5	Not Given	Electric	Straight Copy
2	55	5	NWPM*	Either	Straight Copy
2	55	5	NWPM*	Either	Production
1	55	10	4 Errors	Electric	Production
1	55	5	2 Errors	Electric	Straight Copy
2	60	5	NWPM*	Electric	Production
1	60	5	5 Errors	Manual	Straight Copy
1	65	5	No Rule	Electric	Straight Copy
1	70	10	2 Errors	Electric	Production

*Net Words Per Minute

copy and production material on either the manual or the electric typewriter.

Table III shows that the shorthand dictation speed of the sixteen employers who gave shorthand tests ranged from 80 words per minute for three minutes to 100 words per minute for five minutes. Three employers gave tests at 80 words per minute for three minutes to applicants for stenographic positions. Four employers gave tests at 80 words per minute to all applicants. Two employers gave tests at 80 words per minute for five minutes to applicants for the position of stenographer and secretary. One employer gave dictation at a rate of 80 words per minute for ten minutes to applicants for secretarial positions. Two employers gave tests at 85 words per minute for three minutes to all applicants. This employer required all office workers to begin as apprentice clerks and move into other jobs as they occurred. One employer gave dictation tests at 90 words per minute for five minutes to all applicants for stenographic positions. One employer gave dictation at 100 words per minute for five minutes to all applicants for secretarial positions.

The error limit for the shorthand dictation tests ranged from no errors allowed to five per cent error allowance. Some of the employers indicated the use of phonograph records and some indicated live dictation. Others did not indicate how the dictation was given. Some employers reported

TABLE III
SKILL REQUIREMENTS IN SHORTHAND FOR INITIAL
EMPLOYMENT BY 16 EMPLOYERS

Firms	Speed	Test Time	Required of Whom
3	80	3	Stenographers
4	80	3	All
1	(Depends on job in question)	3	Stenographers and Secretaries
2	80	5	Stenographers and Secretaries
1	80	10	Secretaries
2	85	3	All
1	90	5	Stenographers
1	100	5	Secretaries
1	(No speed specified)		Stenographers and Secretaries

that the dictation was given on technical or job related material, while others did not indicate what material was used. Six of the sixteen firms reported that all applicants were required to pass the shorthand tests, while ten firms required only those who would be stenographers and secretaries to take the test. The firm that required 100 words per minute for shorthand was the one that required 70 words per minute for typewriting.

The data given in Table III indicate that, to pass the shorthand employment tests given by the majority of the firms used in this survey, a person must be able to take dictation on material containing oil and chemical terms at 80 to 100 words per minute for three to five minutes and transcribe the material accurately and rapidly.

A battery of tests is given by many businesses rather than a test to measure only one area. Several tests give a more complete picture of an applicant. A number of batteries are available, including the Short Employment Tests, a battery of three five-minute tests that have been designed to provide some indication of office abilities. The SET-Verbal measures word knowledge and vocabulary; the SET-Clerical requires the applicant to locate and verify names in alphabetical lists, and then read and classify dollar amounts entered opposite the name; and the SET-Numerical consists of simple computations.

The SET-Numerical includes computations in addition, subtraction, multiplication, and division.³²

Tests are considered to be of little value unless their reliability and validity have been established. Reliability of a given test (that is, the ability of tests to give the same score on repetition) may be determined before beginning a testing program using that test. Validity can be determined if the test is used and all people taking the test are employed. After a reasonable period of time has elapsed, if there is high correlation between test scores and success or failure on the job, then the tests may be considered to be valid. Tests must be administered by trained personnel. Employment tests used in conjunction with personal interviews, can help in the selection of personnel, thereby promoting better employer-employee relationships and eliminating such waste as unnecessary turnover of manpower.³³

Most business firms give tests on mental ability, mechanical ability, clerical skills, and stenographic skills, which have been designed to fit their own purposes. Companies employing only a few office workers may depend on standards developed by a national research agency such as the National Office Management Association. This organization has worked

³²"Easy Does It With Tests," op. cit., p. 30.

³³Aspley, op. cit., p. 58.

out a series of tests for which, upon successful completion, certificates of proficiency may be given. A proficiency certificate is given in spelling and in mathematics to students who make one hundred per cent.³⁴

National Business Entrance Tests have been given for more than twenty years by NOMA, in co-operation with business educators, school administrators, and office personnel managers. These achievement tests measure marketable productivity. The tests are designed to aid in determining the student's capabilities for employment. The program consists of skill tests in stenography, typewriting, machine calculation, book-keeping, and general clerical work, including filing. All students who participate in the program are required to take a business fundamentals and general knowledge test, for which there is no charge. A small fee is charged for the skills tests. The tests are administered in co-operation with business educators. The scoring of the tests is done by a national scoring center provided by the National Business Education Association. Students who pass these tests receive a Superior Proficiency certificate, which is accepted by some personnel directors in lieu of employment tests.³⁵

A nationwide study of vocational requirements made by

³⁴ Ibid., p. 34.

³⁵ Opal Heatherly, "NOMA Will Find It For You," Business Education World, Vol. 43, No. 8, April, 1963, p. 9.

NOMA and the United Business Education Association a few years ago established rates of speed for typewriting and shorthand. The majority of companies reported straight copy rates of 45 to 60 words a minute in typewriting. Shorthand speed rates of 80 words a minute as a minimum were reported, with a transcription rate of 30 words a minute.³⁶ These rates are considered adequate by some companies, and insufficient by others.

The tests used by the Civil Service Commission in the selection of employees for the Federal Government are among the best known for their valid standards, having been used for many years on thousands of applicants. The Commission has adopted standards for typists, stenographers, and many clerical positions.

A bulletin, AN 2400 R2, Federal Office Assistant Examination: Stenographer, Typist, Clerk, and Office Machine Operator, What It Is, and How It Is Given, from the United States Civil Service Commission in Washington, D. C., describes fully the tests and how they are administered. An applicant is tested on verbal abilities, arithmetic, and clerical abilities. There are 85 questions on the verbal ability test --25 on word meanings, 20 on word relationships or analogy, 20 on spelling, 10 on grammar, and 10 on reading.³⁷

³⁶Aspley, op. cit., p. 54.

³⁷United States Civil Service Commission, AN 2400 R2, Federal Office Assistant Examination: Stenographer, Typist, Clerk, and Office Machine Operator, What It Is, and How It Given, (Washington: United States Government Printing Office, 1964), p. 8.

The score on the arithmetic computation test is considered only when the applicant is seeking a position which requires a high level of facility with numbers. However, many of the clerical positions do require arithmetic skills. The tests require approximately two hours to administer.

The Clerical Abilities Test given by the Civil Service Commission measures speed and accuracy on four clerical tasks with 120 questions and short time limits. It is composed of questions on name and number checking, arrangement of names in correct alphabetical order, simple arithmetic, on inspecting groups of letters and numbers, 30 questions to each group, arranged in cycles of five questions to each group. Speed as well as accuracy is important on this to achieve a good score.³⁸

The Typewriting Test requires about 15 minutes. This allows for reading instructions, practice, and a five-minute timed test. The score on this test reflects both speed and accuracy, with accuracy weighted twice as heavily as speed. This test can be based on gross or net words per minute with a fixed number of errors.³⁹

The Shorthand Test includes a practice dictation and a test dictation of three minutes each at 80 words per minute. The letters are of nontechnical material which might be given

³⁸Ibid., p. 23.

³⁹Ibid., p. 33.

in a Government office. The applicant is not required to type a transcript, but follows a procedure which can be machine scored. This is done by filling blanks from the shorthand notes. There are 125 blanks and the applicant must fill in 111 blanks in order to pass the test. This test has been devised through careful study of hundreds of tests to simplify and speed up the scoring process. The applicant is then given thirty minutes in which to fill in the blanks, and then ten minutes in which to transfer the answers to an answer sheet. The transferring of the answers requires a measure of clerical skill and if not carefully done may cause the applicant to fail the test.⁴⁰

The Office Machine Operator Test is a special test of dexterity and of perception. All applicants for Office Machine Operator positions are required to take the test of dexterity and of perception. Both these tests are short and speed is very important.

The Letter Series Test for Electric Accounting Machine Operators and Cryptographic Equipment Operators consists of 30 sets of letters following a definite order determined by a rule.⁴¹

⁴⁰Ibid., p. 39.

⁴¹Ibid., p. 51.

The Civil Service Commission issues Certificates of Proficiency in typewriting and shorthand. These tests may be given by the instructors in public and parochial schools, and accredited private high schools, business schools, and junior and senior colleges. The certificate must show that a test was administered not more than six months prior to the date on which the certificate is filed by a teacher. This certificate must be submitted on the proper form, and the applicant must indicate at the testing center that these tests have been given.

Civil Service tests that are given to applicants to be employed at the Manned Spacecraft Center at Clear Lake City, Texas, were the only civil service tests used in this survey. The information pertaining to the tests and the placement of applicants on the Register was obtained through a personal interview with an administrative assistant, and correspondence with the Interagency Board of U. S. Civil Service Examiners for the Texas Gulf Coast Area, which is located in Houston, Texas. Many jobs are available for high school graduates that pass the tests, and they are encouraged to take the tests. The applicant takes the test and her name is placed on the Register, according to the test score. Higher scores mean higher placement. The Register is open only at certain times of the year, and announcements are sent to schools advising them of the testing dates. When employees are needed, the

Board is notified. The persons with the higher scores are called in for an interview. New employees serve for one year on probation and then, after the second year, are transferred to permanent positions.

Summary

Employment tests are being widely used in business and industry today, despite the high expense of administering these tests. Tests are used especially in the selection of new employees. Some of the kinds of tests used are these: intelligence, aptitude, interest, personality, and achievement. Intelligence or learning ability tests predict success in many kinds of employment. Aptitude tests show potential ability for a particular subject or occupation. Interest tests, closely related to ability and aptitude tests, measure individual preferences. Although personality tests are difficult to evaluate, they are used in an attempt to predict probable occupational adjustment. Achievement tests attempt to determine the degree of knowledge and/or skills that have been developed. Sometimes a battery of tests including one or more tests in each of these areas is given.

Tests used by Civil Service are among the best known for their valid standards, having been used for many years on thousands of applicants. These Civil Service tests measure verbal abilities, arithmetic, and clerical abilities. Different

tests are given according to classification of jobs desired.

In this study eighteen of the twenty employers reported that they gave employment tests. These tests were composed of some or all of the following: shorthand, typewriting, general clerical ability, spelling, language ability, and intelligence tests. The eighteen companies employed a total of 583 office workers. Two companies that employed a total of sixteen office workers indicated that they did not give employment tests although one gave a physical examination. Fourteen of the twenty employers reported the use of intelligence tests although only four indicated the specific test used, the Wonderlic Personnel Test. Six of the employers reported the use of aptitude tests. One company specified the use of the General Clerical Test, and two companies felt that the Wonderlic Personnel Test measured both intelligence and aptitude. Eighteen of the 20 employers reported the use of typewriting and/or shorthand tests. Twelve employers indicated the use of spelling tests, and seven reported the use of vocabulary or verbal abilities tests.

Civil Service tests used to employ office workers at the Manned Spacecraft Center at Clear Lake City were the only Civil Service tests referred to in this survey; however, the jobs have certain classifications and all Civil Service workers take the same kinds of tests.

CHAPTER IV

A SURVEY OF 20 SELECTED OIL AND CHEMICAL INDUSTRIES IN THE BAYTOWN AND HOUSTON SHIP-CHANNEL AREA

This chapter of the study is devoted to the presentation of data obtained from 20 selected oil and chemical industries along the Houston Ship Channel and the vicinity of Baytown, Texas. The Manned Spacecraft Center of the National Aeronautics and Space Administration at Clear Lake City, Texas, was included in the study as it was felt that many of the Civil Service jobs there could be secured by high school graduates in this area. A map shown in Appendix A gives the location of the 20 industries used in the survey and the industrial classification of each.

Mailed questionnaires were used to obtain the data. The structured form of the questionnaire was used, with the selection type of items so that the respondent had a choice of answers and in most instances had only to check blanks. The questionnaire, shown in Appendix B, was designed to obtain from each employer the following information: industrial classification; type of positions; number of office workers employed; minimum and maximum age limits; methods most often used to secure office workers; kinds of employment tests used, skilled and other; importance of school accomplishments; type of student preferred by academic standards; weaknesses of

beginning office workers; education beyond high school required and/or preferred; and testing methods.

The questionnaire was accompanied by a letter, shown in Appendix C, explaining the purpose of the questionnaire. Attached to the letter was a dime and a notation to have a cup of coffee while answering the questionnaire. All of the employers returned the questionnaire promptly. Sixteen of them returned the dime, one with the notation "the coffee is free," and one with the notation "thanks, but I never drink alone." All of them expressed interest in the survey and some asked to see it after it was completed. Most of the ones who did not answer some of the sections made a note of apology.

Industrial Classification

Table IV shows the industrial classification of the 20 firms participating in the survey. Fourteen, or 70 per cent of the industries were chemical; four companies or 20 per cent, were classified as oil and chemical; and two companies or 10 per cent, were classified as other. One of these firms was natural gas transmission by underground pipeline, and one was a manufacturer of fibre and steel drums.

The number of office workers employed by each firm ranged from two employees to 116 employees, making a total of 590 office employees for the 20 firms. Table V shows the

TABLE IV
INDUSTRIAL CLASSIFICATION OF 20 FIRMS
USED IN THE SURVEY

Industrial Classification	Number	Per Cent
Oil and Chemical	4	20
Chemical	14	70
Other	2	10
Totals	20	100

number of office workers in groups of ten, the number of firms employing these workers, and the per cent of the 20 firms surveyed. Seven, or 35 per cent, employed from two to ten office workers. Three of these employed two to five, while four employed from five to ten people. Three, or 15 per cent, employed between eleven and twenty office workers. One of these employed 18 and the other two employed 20 each. Four, or 20 per cent, employed between 21 and 30 office workers. One of these firms employed 25, one employed 29, and the other two employed 28 each. One, or five per cent, employed between 31 and 40 office workers, having 38 employees. Two firms, or 10 per cent, employed between 41 and 50 office workers, one having 45 and the other having 47 office employees. One firm, or five per cent, employed between 51 and 60 office workers, with 57 employees. Two firms, or 10 per cent, employed more than 60 office workers, one with 81 employees and the other with 116 office workers.

Although only 20 firms were investigated for this survey, it was felt that it was a valid sample as there were so many office employees involved.

Number and Per Cent of Employees in Each Position

Table VI shows the total number of office workers employed in each position, the per cent of the 590 employees, the number of firms employing these people in this position, and the per cent of the 20 firms surveyed.

TABLE V
NUMBER OF OFFICE WORKERS
REPORTED BY 20 EMPLOYERS

Number of Office Workers	Number of Firms	Per Cent
2 - 10	7	35
11 - 20	3	15
21 - 30	4	20
31 - 40	1	5
41 - 50	2	10
51 - 60	1	5
More than 60	2	10
Totals	20	100

TABLE VI
NUMBER AND PERCENTAGE OF 20 EMPLOYERS WHO
EMPLOY OFFICE WORKERS FOR EACH TYPE OF POSITION

Type of Position	Total Employees In Each Position	Per Cent of 590	Number Firms	Per Cent of 20
Accountant	45	7.6	16	80
Analyst	17	2.9	2	10
Bookkeeper	10	1.7	6	30
Clerk	134	22.8	16	80
Machine Operator	28	4.8	6	30
Office Assistant	37	6.3	2	10
Receptionist	18	3.1	18	90
Secretary	111	18.8	19	95
Stenographer	122	20.1	15	75
Typist	54	9.1	10	50
Apprentice Clerk	8	1.4	2	10
Other	6	1.1	4	20
Totals	590	100.0	20	

Sixteen, or 80 per cent, of the 20 firms employed a total of 45 accountants, or 7.6 per cent of the 590 office workers. The number of accountants in each firm ranged from one in five firms to six in four firms, with these respective numbers: one in five firms; two in four firms; three in three firms; five in one firm; and six in three firms. Two of the firms, or 10 per cent, indicated that their job classification was known as accountant and analyst. These employees were shown here as analysts; one in one company, and sixteen in the other, making a total of seventeen, or 2.9 per cent of the total employees.

Six firms, or 30 per cent, employed a total of ten, or 1.7 per cent, bookkeepers, with no more than two in a company. Some firms reported that they did not separate the positions of accountant and bookkeeper.

Sixteen firms, or 80 per cent, reported a total of 127, or 21.5 per cent, employees in the position of clerk. Many of these were classified as clerk-typists and no separate figures were given for typists. The number of clerks in each firm ranged from one to 20.

Eight firms, or 40 per cent, reported a total of 35, or 5.9 per cent, machine operators. The number of machine operators in each firm ranged from one to ten. Only one firm indicated the type of machine used and this was the Key Punch, with seven employees.

Eighteen, or 90 per cent, of the firms have one receptionist each. This represents 3.1 per cent of the 590 office workers. None of the firms had more than one receptionist.

Nineteen firms, or 95 per cent, indicated a total of 111, or 18.8 per cent, secretaries. The number of secretaries in each firm ranged from one to 35.

Fifteen firms, or 75 per cent, reported stenographers totaling 122, or 20.1 per cent. The number of stenographers in each firm ranged from one to 36.

Ten firms, or 50 per cent, reported typists totaling 54, or 9.1 per cent. As has already been mentioned, some firms classified typists and clerks as the same position. Two firms, or 10 per cent, reported the classification of apprentice clerk with 8, or 1.4 per cent, in this classification. In these two firms all new employees go into this classification and are promoted as the vacancies occur. This is more or less a position of mail or messenger girl, and the new employees have an opportunity to learn about the operation of the company while in this position.

All other employees reported were shown as "other" employees, with four firms, or 20 per cent, reporting six, or 1.1 per cent, employees as messengers, purchasing agents, and office managers.

Minimum and Maximum Age Accepted

Table VII shows the minimum and maximum age accepted by the 20 employers for beginning office workers. Fourteen, or 70 per cent, of the 20 firms surveyed reported a minimum age of 18 as acceptable for all positions except those of accountants and analysts. Thirteen firms required accountants to be 21 years of age. One firm required accountants to be 24 years of age. One firm employing eighteen office workers gave 21 as a minimum age and said that for rare exceptions the minimum age was lowered to eighteen. This firm employed eight clerks, one receptionist, one secretary, and two stenographers. One firm said that the age did not matter just so they were out of high school. Five firms gave no information on age requirements. One of the firms that reported 18 as the minimum age said that age is related to experience and education required, and that they would not look for an eighteen-year-old with a degree and ten years' experience.

One questionnaire was returned from the personnel director with a very nice letter in which he said that maximum age limits are today's legal and sociological taboos. He said that he would be surprised if any specific replies to this question were received, but that age is at least a consideration in filling most jobs.

TABLE VII
MINIMUM AND MAXIMUM AGE ACCEPTED
FOR EMPLOYMENT OF OFFICE WORKERS

Minimum Age			Maximum Age		
Firms	Age	Comments	Firms	Age	Comments
5		No Age Information	5		No Age Information
14	18	Except Accountants and Analysts*	1	40	No Comments
1	21	All Employees	1	40	25 For Messenger
			1	45	No Exception
			12		No Maximum

*13 required accountants and analysts to be 21.
1 required accountants and analysts to be 24.

Methods Used To Secure Employees

Personal applications were the most popular source reported by 20 employers for securing employees. Table VIII shows the first and second choices of the 20 employers and the percentages of each.

The first choice rankings of the 20 employers and the percentages were these: personal application, eleven firms, or 55 per cent; firm employees, seven firms, or 35 per cent; and government employment agencies, two firms, or 10 per cent.

The second choice rankings of the 20 firms and the per cent of each were these: personal application, five firms, or 25 per cent; firm employees, unsolicited letters, business associates, and private employment agencies by three firms for each method, or 15 per cent of the employers. Some employers indicated that unsolicited letters meant the same as personal application. School placement agencies were reported by two, or 10 per cent of the employers, but no school was mentioned. One employer, or 5 per cent, gave want ads as the second choice.

Sixteen of the 20 firms reported that an applicant might apply for a specific position. Two reported that one could not apply for a specific position. Two respondents did not answer the question. One firm answered yes, occasionally, and two firms answered yes; however, the starting classification would be that of apprentice clerk.

TABLE VIII

METHOD MOST OFTEN USED BY 20 EMPLOYERS
FOR SECURING OFFICE EMPLOYEES

Method Used	First Choice		Second Choice	
	Number	Per Cent	Number	Per Cent
Firm Employees	7	35	3	15
Personal Application	11	55	5	25
Government Employment Agencies	2	10		
Unsolicited Letters			3	15
Business Associates			3	15
Want Ads			1	5
School Placement Agencies			2	10
Private Employment Agencies			3	15
Totals	20	100	20	100

Importance of Applicant's School accomplishments

Employers were asked to indicate the importance of the following accomplishments: grades earned; opinions of teachers; elective offices held; honors won; and extra-curricular activities. Two firms did not respond to this section of the questionnaire. Table IX was based upon the 18 employers who responded. The majority of the firms placed "some importance" upon past accomplishments with the exception of extra-curricular activities.

Employers' rankings as of "great importance" were these: grades earned, seven, or 38.8 per cent; opinions of teachers, three, or 16.7 per cent; elective offices held, two, or 11.1 per cent; honors won, four, or 22.2 per cent; and extra-curricular activities, two, or 11.1 per cent.

The firms ranked as of "some importance" these: grades earned, 11, or 61.1 per cent; opinions of teachers, 14, or 77.8 per cent; elective offices held, eight, or 44.4 per cent; honors won, 12, or 66.7 per cent; and extra-curricular activities, seven, or 38.8 per cent.

All firms considered grades of "some importance." One firm, or 5 per cent, considered opinions of teachers of "no importance." Eight firms, or 40 per cent, reported elective offices held of "no importance." Two firms, or 11.1 per cent, reported honors won as being of "no importance;" and nine, or

TABLE IX
IMPORTANCE OF CERTAIN SCHOOL ACCOMPLISHMENTS
AS RANKED BY 18 EMPLOYERS

School Accomplishment	Great Importance		Some Importance		No Importance	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Grades Earned	7	38.8	11	61.1	0	0
Opinions of Teachers	3	16.7	14	77.8	1	1.5
Elective Offices Held	2	11.1	8	44.4	8	44.4
Honors Won	4	22.2	12	66.7	2	11.1
Extra-Curricular Activities	2	11.1	7	38.8	9	50

50 per cent considered extra-curricular activities of "no importance."

The questionnaire asked employers to indicate the type of student by academic standards that they preferred. They were given the choice of superior, above average, average, or below average. Five, or 25 per cent, of the employers indicated that they preferred the superior student. Twelve, or 60 per cent, reported that they preferred the above average student. Three, or 15 per cent, preferred the average student.

Weaknesses of Beginning Office Workers

Employers were asked to rank five weaknesses of beginning office workers. They were given choices of skills as well as academic subjects. Five of the employers did not answer this section of the questionnaire. One employer placed a question mark across the section. Three employers said that they found no weaknesses for the applicants who passed their tests. One of these said that only 2 per cent of the applicants could pass his tests.

Table X shows the eleven weaknesses that were listed on the questionnaire and the order in which they were ranked by the fifteen employers who responded. Nine of the fifteen employers indicated that spelling was the greatest weakness. One employer double-checked spelling as the greatest weakness. Vocabulary and arithmetic were ranked first by two employers.

TABLE X
GREATEST WEAKNESSES AS INDICATED
BY 15 EMPLOYERS

Weakness of Employee	Ranked		by	Employers		Number Times	Per Cent Times
	1	2		4	5		
Spelling	9	4	1	4		15	100
Vocabulary	2	4	2	2	5	15	100
Grammar	1	3	1	4		9	60
Punctuation		2	2		1	5	30
Penmanship	1				1		6.67
Arithmetic	2		1			3	20
Filing		1		3		4	26.7
Transcription		1	2			3	20
Shorthand		1	1	4		6	40
Typewriting			3	3	2	7	46.7
Office Machines			2	1	4	7	46.7

Four employers ranked vocabulary and spelling as the second greatest weakness. Two employers ranked vocabulary, punctuation, shorthand, and typewriting, as the third greatest weakness. Grammar and shorthand received the most votes for fourth place, with vocabulary and office machines next in importance. Five employers ranked vocabulary as the fifth weakness.

When read as the number of employers mentioning the various skills, Table X showed the following rankings as indicated by the 15 employers: spelling and vocabulary, 15 employers, or 100 per cent; grammar, nine employers, or 60 per cent; typewriting and office machines, seven employers, or 46.7 per cent; shorthand, six employers, or 40 per cent; punctuation, five employers, or 30 per cent; filing, four employers, or 26.7 per cent; arithmetic and transcription, three employers, or 20 per cent; and penmanship, one employer, or 6.67 per cent.

These data show that many high school graduates are weaker in the academic subjects of spelling, vocabulary, and grammar than in the skill subjects. These factors should be emphasized in all classes. Special attention should be given to these weaknesses in the secretarial classes. Regular weekly spelling word list tests have been used in the shorthand classes of Barbers Hill High School. In addition, each misspelled word has been considered an error in grading transcription.

Personal Traits and Attitudes of Importance

Employers were asked to indicate on the questionnaire which personal traits were most important in office workers. They were given nineteen traits and asked to rank ten traits in the order of their importance. Some of the employers checked fewer than ten traits, and some checked one trait more than once as being more important than others. Two employers did not answer this section of the questionnaire, indicating that the applicants they employed had no undesirable traits. One employer said that honesty was not checked because without it the other qualities were inconsequential. This employer ranked initiative first, accuracy second, and both dependability and responsibility as fourth.

The traits were ranked in Table XI according to their frequency: punctuality, first, by 17 employers; dependability, second, by 15 employers; ability to follow directions, third, by 14 employers; honesty, fourth, by 13 employers; personal appearance, fifth, by 12 employers; accuracy, sixth, by 11 employers; initiative and self-control, seventh, by 10 employers; loyalty, poise, neatness in work, and mental alertness, eighth, by nine employers; friendliness, ninth, by eight employers; courtesy and responsibility, tenth, by seven employers; cheerfulness and tact, eleventh, by six employers; trustworthiness, twelfth, by four employers; and voice quality, thirteenth, by two employers.

TABLE XI
10 PERSONAL ATTITUDES AND TRAITS
RANKED IN ORDER OF IMPORTANCE BY 18 EMPLOYERS

Rank	Attitudes and Traits	Frequency
1	Punctuality	17
2	Dependability	15
3	Ability To Follow Directions	14
4	Honesty	13
5	Personal Appearance	12
6	Accuracy	11
7	Initiative	10
7	Self-Control	10
8	Loyalty	9
8	Poise	9
8	Neatness In Work	9
8	Mental Alertness	9
9	Friendliness	8
10	Courtesy	7
10	Responsibility	7
11	Cheerfulness	6
11	Tact	6
12	Trustworthiness	4
13	Voice Quality	2

It is interesting to note that punctuality ranked first with 17 of the 18 employers, and dependability ranked second. These two traits are closely related, as to be punctual is to be dependable; and, if one is dependable, he will be punctual. Chapter II of this study mentioned a nationwide study made by the Public Relations Committee of the National Office Management Association to determine the importance of attitudes and personality traits. They used an opinion questionnaire in which some nine hundred office managers participated. The survey revealed that the employers valued dependability as the most important character trait of an employee. Other highly ranked traits in the study were these: loyalty, honesty, trustworthiness, good judgment, common sense, poise, emotional stability, and initiative or resourcefulness. Both employers and employees in the NOMA survey considered all of the above mentioned traits to be far more important than personal appearance.

Education

The questionnaire asked employers to indicate whether they required education beyond high school. They were also asked to indicate whether they preferred more education in cases where it was not required.

Table XII shows the number of employers who required further education, the number of employers who did not require

further education, and comments made by the employers. The table shows that only one of the 20 employers in the survey required further education for secretarial and stenographic personnel. However, 13 employers indicated that they required college, most requiring degrees, for accountants. One employer required college for technical workers. Of the 20 respondents, 12 preferred further education for all employees, especially for secretaries and stenographers.

Testing Methods

Employers were asked six specific questions about their testing methods. The first question asked if the employer had specific testing days. The second question asked if an applicant should call for an appointment before coming in to take the test. The third question asked for the length of time required to complete the test. The next question asked whether an applicant might apply for a specific position. Question five asked if personal interviews were conducted along with the test. The last question asked where the applicant should go to take the test.

Two employers gave no employment tests. Fifteen employers said they did not have regularly scheduled testing days. One employer said he had regular testing days when there were openings to fill. Two employers said they had

TABLE XII
EDUCATION REQUIREMENTS FOR
BEGINNING OFFICE WORKERS BY 20 FIRMS

Above High School		Comments
Yes	No	
	1	All successful applicants have had more than high school education.
	1	Prefer at least business school for typists and stenographers.
	6	Prefer for stenographers, secretaries, required of accountants.
	2	Prefer some college or business school.
1		Required for accountants, secretaries, stenographers, and senior clerks.
	1	Required for technical.
	1	-- No Comment --
	1	Required for accounting personnel and engineers
	1	Required for accountants and C.P.A.
	1	Required for accountants and executives, prefer for all.
	1	Require college degree for accounting personnel.
	1	Required for accountants, office manager, and purchasing agent, preferred for all.
	2	Required for accountants and analysts.

regular testing days on Wednesday and Thursday morning of each week.

Table II, page 32, shows the kinds of tests given, the number of firms giving each kind of test, and the per cent of firms giving each test.

Seventeen employers said that an applicant should call for an appointment to take the employment tests. One employer said it was not necessary to call for an appointment.

The time required to take the employment tests varied from 30 minutes to five hours. Table XIII shows the length of time required, whether the applicant may apply for a specific position, whether personal interviews are given, and where the applicant should go to take the employment tests.

Three of the firms required between 30 to 45 minutes to complete the tests. Eleven firms required between one hour and two-and-one-half hours to take the employment tests. Three firms required three to four hours to complete the tests. One firm, that employed two office workers, one accountant and one secretary, required five hours to complete the tests. This was the employer who said that only 2 per cent of the applicants should be able to pass his tests, and who required 70 words per minute in typewriting, and 100 words per minute shorthand speed.

Fifteen of the 20 employers said that a person could apply for a specific position. One of these said yes,

TABLE XIII
 INFORMATION ON TESTING METHODS OF 18 EMPLOYERS
 WHO GAVE EMPLOYMENT TESTS

Number Of Firms	Length of Employment Tests	May One Apply For A Specific Position	Personal Interviews	Where To Apply
2	30 Min.	Yes	Yes, if Vacancy Exists	Personnel Office
1	45 Min.	Yes	Yes, Before and After	At Plant Site
1	1 Hour	Yes	Sometimes	Reception Desk
1	1½ Hours	Yes (Occasionally)	Yes	Personnel Office
2	1-2 Hours	No	Yes	Personnel Office
7	1½-2½ Hours	Yes	Yes	Personnel Office
1	3 Hours	No	No	Personnel Office
1	3 Hours	Yes	No	At Plant
1	3-4 Hours	Yes	Yes	Personnel Office
1	5 Hours	--	Only if Pass Tests	---

occasionally. Two of these said yes; however, the starting classification was that of apprentice clerk.

Three employers answered that applicants could not apply for specific positions. Two employers did not respond to this question.

Seventeen of the employers indicated that they had personal interviews. One employer did not respond to this question. One employer said that he had interviews only if a vacancy existed. One employer said that he had a personal interview before and after the tests. One employer had a personal interview before the testing. Three employers had personal interviews after the applicant had qualified on the tests. These employers had a panel of interviewers who determined the capabilities of the applicant as well as how the applicant would fit into their organization. One firm that gave no employment tests had a three member interview team to decide on the applicants, giving the department head the "last word."

All of the employers indicated that a person should go to the personnel department of the firm to take the employment tests, after calling for an appointment.

Summary

Questionnaires were mailed to 20 industries in the vicinity of Baytown, Texas, and the Houston Ship Channel. Fourteen of the industries were chemical, four were oil and chemical, and two were classified as "other." One of these was an underground gas transmission company, and the other was a manufacturer of fibre and steel drums. The 20 industries employed a total of 590 office workers. Employers were asked to give information about the types of positions, the number of workers in each position, methods of securing new employees, kinds of employment tests used, weaknesses of beginning workers, and testing methods used.

The number of employees in each firm ranged from two in one company to 116 in another company. Office workers were classified as accountants, analysts, bookkeepers, clerks, machine operators, office assistants, receptionists, secretaries, stenographers, typists, apprentice clerks, and others. The number of workers in each firm ranged from one accountant in one firm to 36 stenographers in another firm.

Fourteen of the 20 firms surveyed required that all employees be at least 18. One of the firms required all employees to be at least 21 years of age. All firms required the accountants to be at least 21 years of age. One firm required accountants to be 24 years of age. Five firms gave no data

on age. The maximum age reported was 40 by two firms, 45 by one firm, and no maximum age was given by twelve firms.

Personal applications were the most popular source of securing employees, being ranked highest by the employers both as to their first and second choices.

Employers were asked to rank grades earned, opinions of teachers, elective office held, honors won, and extra-curricular activities. Grades earned ranked highest as most important and opinions of teachers ranked as second.

The questionnaire asked employers to indicate the type of student by academic standards that they preferred, and the majority of the 20 firms indicated that they preferred the above average student. Three of the 20, or 15 per cent, reported that they preferred the average student.

Beginning employees were ranked according to weaknesses in academic and clerical skills. Employers ranked spelling as the greatest weakness, with vocabulary as the second greatest weakness.

Employers were asked to indicate the traits most important in office workers. From a list of fifteen traits the greatest frequency was punctuality, first, dependability, second, and ability to follow directions as third.

Only one of the employers indicated the requirement of further education of all employees, however, most of them said that they preferred more than a high school education.

Thirteen employers indicated that they required college, most requiring degrees, for accountants. One employer required college for technical workers. Twelve employers preferred further education for all employees, especially for secretaries and stenographers.

The employers were asked about their testing methods. Two employers gave no employment tests. The other 18 firms gave tests which varied in length from 30 minutes to five hours. Employment tests given by these firms were composed of some or all of the following: shorthand, typewriting, general clerical ability, spelling, language ability, and intelligence.

Fifteen of the employers said that a person could apply for a specific position, and one said occasionally. Two employers said yes; however, the starting classification would be that of apprentice clerk.

Seventeen of the employers indicated that they had personal interviews. Some of the employers indicated that the interview was before the test, and some had interviews after the test had been successfully completed. All employers indicated that a person should call for an appointment before coming to take the test.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

Introduction. One of the primary objectives of business education is to prepare students to be competent business employees. The demands of employers for proficiency in employees emphasizes the importance of this objective. An efficient business teacher must be constantly alert to changes that are occurring in business in order to meet the demands of modern business in the community, to possess the knowledge of available jobs, and to know the requirements of the jobs that are available.

Numerous sources of information are available regarding job opportunities and requirements. A community survey can be a desirable aid in establishing standards of achievement, revisions of curriculum, replacement of and additions to equipment.

Statement of the Problem. The problem of this study was to survey the requirements of selected industries for beginning office workers and, in view of the requirements, to evaluate standards of achievement in the business subjects in the Barbers Hill High School at Mont Belvieu, Texas, in order

to make recommendations as to possible changes in curriculum and/or subjects taught.

Sub-problems were these: (1) to secure data concerning employment tests given to applicants for office work; (2) to identify weaknesses in skills, abilities, and personal traits of applicants and beginning workers; (3) to compile as nearly as possible the actual requirements of different industries for office personnel; (4) to evaluate present requirements in the Barbers Hill High School business education courses; and (5) to make recommendations for changes in present standards or additions to the curriculum.

This survey of 20 selected oil and chemical industries in the vicinity of Baytown, Texas, and the Houston Ship Channel, sought to gain information which could be utilized in making recommendations as to possible changes in curriculum and/or subjects taught in the Barbers Hill High School, which was located in Mont Belvieu, Texas. Mailed questionnaires were used to obtain information pertaining to requirements for initial employment of office workers; type of positions; type of employment tests used; school accomplishments of importance to employers; type of student preferred; and weaknesses in skills, abilities, and personal traits of applicants and beginning workers. The 20 firms participating in the survey employed a total of 590 office workers.

Purpose of the Study. The primary purpose of the

study was to gain information to be utilized in the training of business education students so that they might secure and successfully maintain positions in the competitive business world of today.

Secondary purposes: (1) to make available to business education students information concerning the types of office jobs and the requirements of each job obtainable in the area, and (2) to emphasize the factors other than skills which are important in determining the acceptability of an applicant for a position.

Numerous articles in business-education periodicals and theses from the libraries of Sam Houston State College in Huntsville, Texas and the University of Houston in Houston, Texas were read. Many of these were related studies of occupational surveys done in other cities.

Summary of Personal Qualities Desired by Businessmen

Although business skills are necessary in beginning workers in obtaining and maintaining an office position, certain personality and character traits are of equal importance. Many studies have been made to determine what employers value in employees and most writers agree that attitudes and personality traits are of prime importance in clerical employment. Personality may be defined as "the composite of

all skills, interests, abilities, and physical and mental characteristics which together give a person individuality." The outward qualities which attract and impress others are: poise, friendliness, appearance, tact, willingness to co-operate with others, and a courteous and cheerful attitude.

Personal appearance is important in a job interview. The applicant should make every effort to favorably impress the interviewer by correct dress, manners, and conversation. The interviewer has been trained to detect the good qualities as well as the undesirable qualities.

Character traits are the ethical qualities such as dependability, honesty, accuracy, and initiative. Of these traits, dependability is the most important, according to a nation-wide survey made by the National Office Management Association, in which some nine hundred office managers participated.

In this study, punctuality was ranked first and dependability was ranked second as the personal traits most important in employees.

A business teacher has the responsibility of helping students to develop the traits and personal qualities which may determine their success as office workers. The student must be assisted in the attainment of emotional maturity which is so vital in acquiring the abilities most needed by those who work with others.

The businessman may require his employees to possess minimum levels of skills in typewriting, shorthand, and other business knowledges. Most companies will accept applicants with skills of 80 to 120 words a minute with accuracy in shorthand, and 50 to 60 words a minute with accuracy in typewriting, if they pass the mental ability tests which may be required. A business student needs training in the tool subjects; arithmetic, grammar, spelling, typewriting, and shorthand, as well as he needs development in desirable attitudes and personality traits.

Summary of Employment Test Requirements

Eighteen of the 20 industries participating in this survey, gave employment tests. These tests were composed of some or all of the following areas: shorthand, typewriting, general clerical ability, spelling, language ability, aptitude, and intelligence tests. The eighteen companies employed a total of 583 office workers. The two firms that gave no employment tests employed a total of sixteen office workers. These two firms reported that for beginning office workers they checked school records, and for applicants with previous experience the checking was done with former employers. Fourteen of the employers reported the use of intelligence tests although only four indicated the specific test used, the Wonderlic Personnel Test. Six of the employers reported

the use of aptitude tests. One company specified the use of the General Clerical Test, and two companies felt that the Wonderlic Personnel Test measured both intelligence and aptitude. Eighteen of the 20 employers reported the use of typewriting tests. Sixteen firms required applicants to pass shorthand tests. Twelve employers indicated the use of spelling tests. Other employers reported that spelling was checked in the transcription of shorthand. Seven firms indicated the use of vocabulary or verbal abilities tests.

Tests used by the Civil Service Commission to employ office workers at the Manned Spacecraft Center at Clear Lake City were the only Civil Service tests referred to in this survey; however, the jobs had certain classifications and all Civil Service workers were required to take the same tests. The testing was done through the United States Inter-Agency Civil Service Board serving the Gulf Coast Area, and located in Houston, Texas. The name of the applicant was placed on the Register according to the test scores with the highest scores listed first. The agency was notified when employees were needed and the names with the highest scores were called in for an interview. The highest ranked applicants were employed sooner than those with lower scores. The agency accepted Certificates of Proficiency given by accredited schools and not dated more than six months prior to the date of application.

This survey revealed that the most popular typewriting speed required was 55 net words per minute on production copy, specified by six employers. Twelve of the eighteen employers that gave typewriting tests reported that they used electric typewriters. Table II, page 42, shows that to be qualified for the typewriting positions in most of the firms in this survey, one should be able to type from 55 to 60 words per minute for five minutes with no more than two to four errors; and one should be proficient in typing both straight copy and production material on either an electric or a manual typewriter.

The most popular shorthand speed was 80 words per minute for three minutes. Most of the firms indicated that the dictation material was related to the job. Six of the sixteen firms that gave shorthand tests required all applicants to take and pass the shorthand test before being employed. Table III, page 45, revealed that an applicant should be able to take dictation at 80 to 90 words per minute for three to five minutes on material containing oil and chemical terms and transcribed accurately and rapidly.

The standards for the business-education courses in Barbers Hill High School compared favorably with the requirements of the firms in this survey and also with the standards set up by the Texas Education Agency. The standards for Barbers Hill High School were these: Typewriting I, 35 to 55

gross words per minute with three errors allowed for five minutes; Typewriting II, 55 to 65 gross words per minute with two errors allowed for five minutes; shorthand, 60 to 80 words per minute for five minutes with 95 per cent accuracy. Not many students reached the higher speeds and made A's in the course.

The standards of the Texas Education Agency, shown in Appendix D, required 30 to 55 words per minute with no more than three errors for five minutes to pass first year typewriting. Fifty-five words per minute were required to make a grade of A. Second year typists were required to type 50 words per minute for five minutes with no more than two errors to pass, and 65 words per minute for five minutes with two errors to make an A. Shorthand requirements were 60 to 80 words per minute for five minutes with 95 per cent accuracy. The shorthand students who contemplated a business career were the ones who made a grade of A, and reached more than 80 words per minute.

These requirements compared favorably with standards established by a nationwide study of vocational requirements made by NOMA and the United Business Education Association a few years ago. The majority of companies in the study reported straight copy rates of 45 to 60 words per minute in typewriting and 80 words per minute for shorthand.

Summary of Other Survey Findings

Of the 20 industries participating in the survey, fourteen were chemical, four were oil and chemical, and two were classified as "other." One of these was a natural gas transmission by underground pipelines, and the other was a manufacturer of fibre and steel drums. The 20 industries employed a total of 590 office workers. Employers were asked to indicate the types of positions, the number of workers in each position, methods of securing new employees, kinds of employment tests used, weaknesses of beginning workers, type of student preferred, education required or preferred, and testing methods used.

The number of employees in each firm ranged from two in one company to 116 in another company. Office workers were classified as accountants, analysts, bookkeepers, clerks, machine operators, office assistants, receptionists, secretaries, stenographers, typists, apprentice clerks, and "other." The others were classified as messenger girls, purchasing agents, and office managers. The number of workers in each classification ranged from one accountant in one firm to 36 stenographers in another firm. More persons were employed for clerical work than were employed for any other type of position, with 134 clerks being employed in the 20 firms. Many of the firms considered clerks and typists to be the

same classification. The next highest group of employees was stenographers, with the 20 firms having a total of 122.

The age requirements ranged from 18 minimum to 45 maximum by the firms that reported on age. Five firms gave no information in this section of the questionnaire. Fourteen firms reported 18 as the minimum for all except accountants, and for this position the minimum age was 21. One firm gave 21 as the minimum for all employees. Only three firms gave maximum age limits. Two of these gave 40 as the maximum age, and the other gave 45. One employer said that age limitations were today's legal and sociological taboos.

Personal application was the method reported as used most often by the majority of the firms. Other methods given were firm employees, government employment agencies, and private employment agencies.

Fifteen firms reported that an applicant might apply for a specific position, while five firms reported that all initial employees began as clerk-typists, messenger girls, or apprentice clerks, and were promoted as the vacancies occurred.

Employers were asked to indicate the traits most important in office workers. The traits and the order of their importance as given by the employers were these: punctuality, dependability, ability to follow directions, honesty, personal appearance, accuracy, initiative and self-control, mental alertness, friendliness, courtesy, and responsibility.

Beginning employees were ranked according to weaknesses in academic and/or clerical skills by the employers. The five greatest weaknesses reported were: spelling, vocabulary, grammar, typewriting, and office machines.

Dependability, punctuality, ability to follow directions, and the ability to get along well with others are factors that have been emphasized in the business education classes in Barbers Hill High School, with these factors being incorporated into the grading system. Regular spelling tests have been given in the shorthand classes. In view of the findings in this survey that spelling is the greatest weakness, spelling should be emphasized in every class.

The questionnaire asked employers to indicate the type of student by academic standards that they preferred, and the majority of the 20 firms indicated that they preferred the above average student. Three of the 20, or 15 per cent, reported that they preferred the average student.

Employers ranked grades earned highest in school accomplishments with opinions of teachers, second; elective offices, third; and honors won, fourth.

Only one of the employers indicated the requirement of education beyond high school for all employees. However, most of the employers said that they preferred all employees to have more than a high school education. Thirteen employers indicated that they required college, most requiring degrees,

for accountants. One employer required college for technical workers. Twelve employers preferred further education for all employees, especially for secretaries and stenographers.

The employers were asked about their testing methods. Two employers gave no employment tests. The other 18 firms gave tests which varied in length from 30 minutes to five hours. Employment tests given were composed of some or all of the following: shorthand, typewriting, general clerical ability, spelling, language ability, and intelligence.

Seventeen of the employers indicated that they had personal interviews. Some of the employers indicated that the interview was given before the test, and some had interviews after the test had been successfully completed. All employers reported that a person should call for an appointment before coming in to take the test.

Findings in this survey are similar to those of other surveys which have indicated major weaknesses in spelling, grammar, and vocabulary. Self-expression and the ability to follow directions, or to get along with others, has been reported in other studies. Employers ranked ability to use office machines in the top five weaknesses in this study. Other studies have ranked ability in use of office machines from fourth to tenth. The three most important personal traits in other surveys were dependability, accuracy, and initiative.

Conclusions

The data collected for this study seem to support the following conclusions:

1. The job classifications by the industries surveyed in this study seem to be adequate, and the basic requirements for each job are known.
2. Many job opportunities are available to well-trained high school graduates in this area.
3. To be well qualified for the office jobs, an applicant must be proficient in shorthand, typewriting, and general clerical abilities.
4. An applicant should be able to use an electric typewriter and some office machines.
5. The standards used in the Barbers Hill High School business education department are meeting the standards set by the Texas Education Agency, and compare favorably with those required by the industries participating in this survey.
6. More elective courses should be added to the high school curriculum so that the second year of typewriting and shorthand can be held to vocational standards.
7. "Career Day" should be made an important part of the school year. The relationship between a student's education and his opportunities in industry should be emphasized.
8. Personal qualities and abilities should be stressed in the training of all students, but these qualities should

3. Students should be given more occupational information through "Career Day" participation, early enough in their high school years to aid in vocational preparation. Careers in Civil Service should be encouraged as there is a demand for office workers in this field, and well-trained high school graduates can qualify for these jobs.

4. Modern equipment such as electric typewriters and a calculator, should be added to the business department of Barbers Hill High School. Proficient use of the electric typewriter and office machines is essential for vocational training.

5. The basic business courses now being offered in the high school are meeting the standards set by the Texas Education Agency. The highest requirements are meeting the standards of industry for high school graduates employed for jobs requiring shorthand and typewriting proficiency. However, the average student cannot attain employment without further secretarial training. Only those students who are interested in vocational work should be encouraged to take the second year of typewriting and shorthand.

6. A course in clerical practice should be added to the business curriculum. A large percentage of the students who take business subjects do not go to college, and these students need specialized training in order to develop

desirable personal traits, and to acquire basic understandings of office systems, procedures, and work techniques.

7. The business courses should emphasize English in order to correct the weaknesses found in beginning office workers. All subject-matter areas should emphasize spelling and vocabulary in order to strengthen the weak areas.

8. Students should be given more training in how to take employment tests and apply for jobs.

9. Students should be made aware of the high value placed by industries on punctuality and dependability and that employers consider grades earned more important than opinions of teachers, elective offices held, or honors won. Teachers should recognize students with perfect attendance records by giving awards or special recognition.

10. The English program in the high school should be strengthened by giving English teachers only four classroom periods daily so that they can have more time for preparation, grading of compositions, and for individual work with students. This practice has been recommended by the National Council of Teachers of English.

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APPENDIX A

EMPLOYER'S QUESTIONNAIRE

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I. Industrial classification of your firm:

☐ Oil
☐ Chemical
☐ Other (Specify) _____

II. Information about office employees:

<u>Type of Position</u>	<u>No. Employed</u>	<u>Minimum Age Accepted</u>	<u>Maximum Age Accepted</u>	<u>Exception</u>
Accountant	_____	_____	_____	_____
Bookkeeper	_____	_____	_____	_____
Clerk	_____	_____	_____	_____
Machine Operator	_____	_____	_____	_____
Receptionist	_____	_____	_____	_____
Secretary	_____	_____	_____	_____
Stenographer	_____	_____	_____	_____
Typist	_____	_____	_____	_____
Other (Specify)	_____	_____	_____	_____

III. How do you most often secure office employees? (Check method used 1,2,3,4,5, in order of preference)

<input type="checkbox"/> Unsolicited letters	<input type="checkbox"/> Business associates
<input type="checkbox"/> Personal application	<input type="checkbox"/> Firm employees
<input type="checkbox"/> Government employment agency	<input type="checkbox"/> School placement agency
<input type="checkbox"/> Private employment agency	<input type="checkbox"/> Other (Specify) _____
<input type="checkbox"/> Recommendation of friends	
<input type="checkbox"/> Want ads	

IV. SKILLS TESTS

A. Typewriting:

- Do you require all applicants to take typewriting Tests? ☐ Yes ☐ No
If no then which ones _____
- Manual _____; Electric _____; Either _____
- Speed requirement: 40 _____; 50 _____; 60 _____; 70 _____ Other _____
- Length of test:
☐ Five Minute
☐ Ten Minute
☐ Other (Specify) _____
- Type of test: Straight Copy _____ Production _____
If Production: Letters _____ Rough Draft _____
- Error Penalty:
 Number errors allowed _____
 Percentage of accuracy required _____
 Other (Specify) _____

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- _____ 60 _____ 90
 _____ 70 _____ 100
 _____ 80 _____ Other (Specify) _____

- _____ 3 minutes
 _____ 5 minutes
 _____ Other (Specify) _____

- Timed
Not timed
Other (Specify) _____

- Error penalty (Specify) _____
Other (Specify) _____

_____ Spelling
 _____ Grammar
 _____ Other (Specify) _____

- C. Other Tests:

- ☐ Psychological
☐ Interest
☐ Aptitude
☐ Intelligence, mental ability, or mental capacity
☐ Other (Specify) _____
☐ None

1. Of what importance are the following school accomplishments in considering an office applicant. (Check):

<u>Accomplishments</u>	<u>No Imp.</u>	<u>Some Imp.</u>	<u>Great Imp.</u>
Grades earned	_____	_____	_____
Opinions of teachers	_____	_____	_____
Elective offices held	_____	_____	_____
Honors won	_____	_____	_____
Extra-curricular activities	_____	_____	_____

2. If measured by academic standards, which type of student do you prefer? (Please check)

<input type="checkbox"/> Superior	<input type="checkbox"/> Average
<input type="checkbox"/> Above average	<input type="checkbox"/> Below average

3. In which of the following skills do you find the greatest weakness among beginning workers? (Rank 5 in 1,2,3, order)

<input type="checkbox"/> Grammar	<input type="checkbox"/> Filing
<input type="checkbox"/> Vocabulary	<input type="checkbox"/> Transcription
<input type="checkbox"/> Punctuation	<input type="checkbox"/> Bookkeeping
<input type="checkbox"/> Spelling	<input type="checkbox"/> Shorthand
<input type="checkbox"/> Penmanship	<input type="checkbox"/> Typing
<input type="checkbox"/> Arithmetic	<input type="checkbox"/> Office Machines
	<input type="checkbox"/> Other (Specify) _____

4. Which of the following personal traits do you consider most important in applicants? (Check 10 in order of importance (1,2,3))

<input type="checkbox"/> Honesty	<input type="checkbox"/> Self-control	<input type="checkbox"/> Punctuality
<input type="checkbox"/> Dependability	<input type="checkbox"/> Neatness in work	<input type="checkbox"/> Mental alertness
<input type="checkbox"/> Accuracy	<input type="checkbox"/> Personal appearance	<input type="checkbox"/> Ability to
<input type="checkbox"/> Initiative	<input type="checkbox"/> Courtesy	<input type="checkbox"/> follow direction
<input type="checkbox"/> Loyalty	<input type="checkbox"/> Responsibility	
<input type="checkbox"/> Tact	<input type="checkbox"/> Trustworthiness	<input type="checkbox"/> Other _____
<input type="checkbox"/> Poise	<input type="checkbox"/> Cheerfulness	
<input type="checkbox"/> Friendliness	<input type="checkbox"/> Voice quality	

5. Do you require further education beyond high school?
☐ Yes ☐ No ☐ Other _____

If you do not require education beyond high school for office jobs, do you prefer it for certain ones, as (please list)

VII. Your Testing Methods:

109

1. Do you have specific testing days? _____
2. Should an applicant call for an appointment to take the test? _____
3. How long does it take to complete the tests? _____
4. May an applicant apply for a specific position? _____
5. Do you have personal interviews at the time one takes the test? _____
6. Where does one go to take the tests for employment at your firm? _____

APPENDIX B

1004 S. Shepherd
 Baytown, Texas 77520
 April 27, 1966

Gentlemen:

Please fill out the enclosed questionnaire.

Let me explain the purpose of the questionnaire. It is being used to make a study of the job opportunities and testing methods used by a group of oil and chemical industries in the Baytown and Houston Ship Channel area. This study is the subject for a thesis in Business Education at Sam Houston State College in Huntsville, Texas.

Effort is being made to improve my teaching methods and to assist high school students in choosing careers and in deciding upon further training.

Any information which you can give me will be greatly appreciated.

Since time is limited, please return the questionnaire as soon as possible.

Enclosed also is a dime for a cup of coffee while you fill out the questionnaire.

Yours very truly,

(Mrs.) Jane Amyett

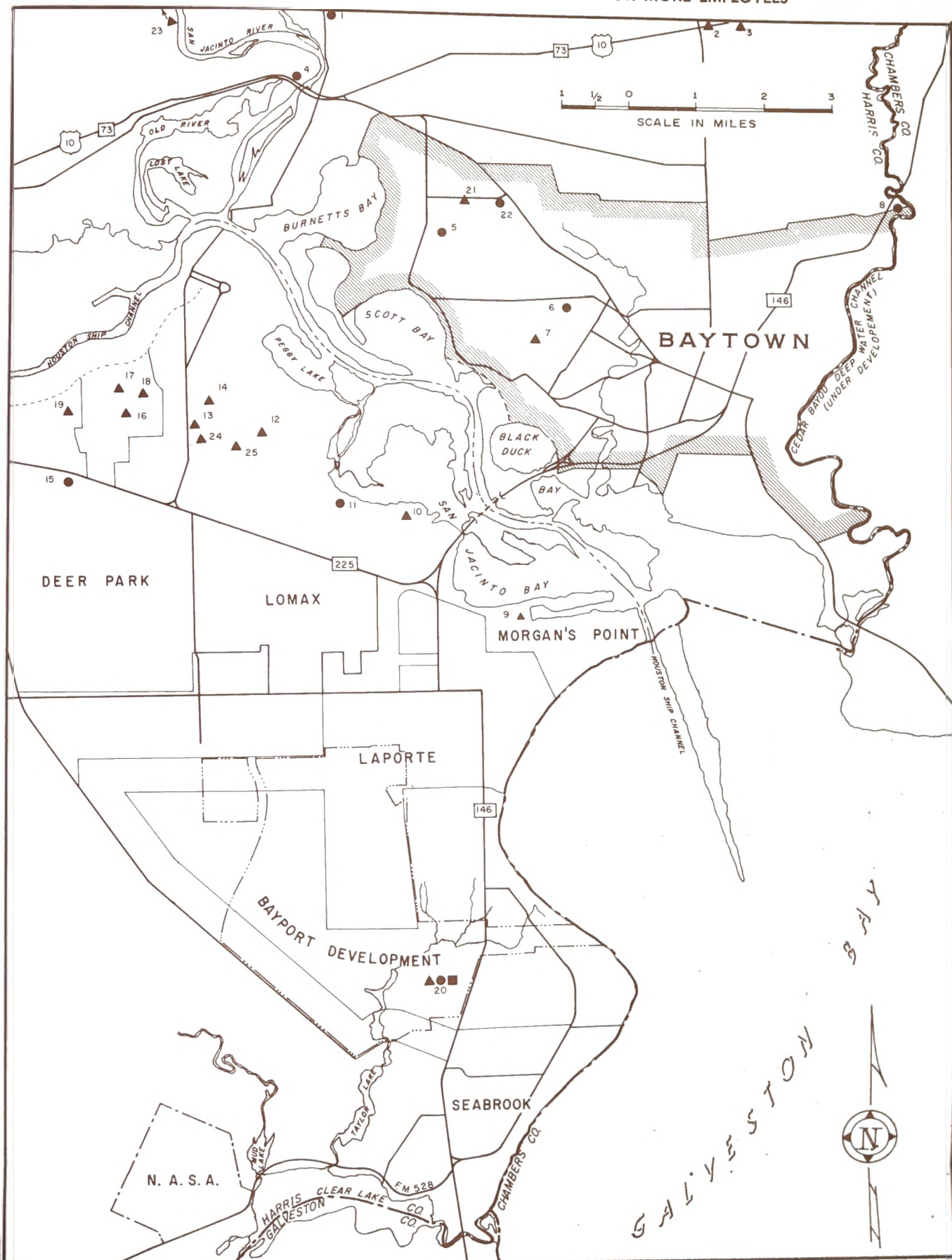
APPENDIX C

Greater Baytown Area Industrial Map

113

Published by Greater Baytown Chamber of Commerce
P. O. Box 647 — Baytown, Texas

SHOWING ALL MANUFACTURING PLANTS WITH 25 OR MORE EMPLOYEES



1. Southern Canning Sales, Inc.
Sub. of SMS Industries
809 East Wallisville

2. Huber, J. M. Corp.
Interstate Hwy. 10

3. Gulf Oil Corp.
Interstate Hwy. 10

4. Triumph Storecrafters, Corp.
Marine Division
18001 Hwy. 73

5. United Rubber & Chemical Co.
Sub. of United Carbon Co.

6. Stauffer Chemical Co.
Consolidated Chem. Ind. Div.

7. Humble Oil & Ref. Co.
Mfg. Div. Baytown Refinery

8. Cedar Bayou Sawmill
Hwy. 146

9. Tenneco Oil Co.
La Porte Fractionating Plant
Barbour's Cut

10. Du Pont de Nemours,
E. I. & Co., Inc.
La Porte Road

11. Grief Bros. Cooperage Corp.
Norco Division
10700 Strang Road

12. U. S. Industrial Chemicals
60 Houston Plant

13. Celanese Polymer Co., Division
Celanese Corp. of America
Battle Ground Road

14. Mosites, G.A. Co. of Houston, Inc.
Affl. of Mosites Rubber Co., Inc.
Battle Ground Road

15. Flexicore of Texas, Inc.
La Porte Road

16. Lubrizol Corp.
Tidal Road

17. Diamond Alkali Co.
Tidal Road

18. Rohm & Haas Co.
La Porte Road

19. Shell Chemical Co.
La Porte Road

20. "Bayport Development"
of Humble Oil

21. Marbon Chemical Corp.
Division of Borg-Warner

22. Texas Eastern
Transmission Corp.

23. Sinclair Petrochemicals, Inc.
Sheldon Road

24. Texas Alkyls, Inc.
Battle Ground Road

25. The Upjohn Co.
Polymer Chemicals Div.
Battle Ground Road

▲ Chemical and Petroleum Refining

■ Primary and Fabricated Metals

● All Other Manufacturing

APPENDIX D

STANDARDS SUGGESTED BY
THE TEXAS EDUCATION AGENCY

Typewriting I
Second Semester

Third Six Weeks						(based on five-minute writings)									
GWPM	35 to 39		40 to 44			45 to 49				50 to 54				55 or higher	
Errors	3-2	1-0	4	3-2	1-0	5	4-3	2	1-0	6	5-4	3	2-0	6	5 4 3-0
Grades	D	C	D	C	B	D	C	B	A	D	C	B	A	D	C B A

Typewriting II
Second Semester

GWPM	50-54		55-59		60-64			65 or higher		
Errors on 5-minute Test	1-0		3-2	1-0	4-3	2	1-0	5-4	3	2-0
Errors on 10-minute Test	7-6		5-4	3-0	5-4	3	2-0	6	5-4	3-0
Grades	C		C	B	C	B	A	C	B	A

STANDARDS SUGGESTED BY
THE TEXAS EDUCATION AGENCY

Shorthand I

Sixth Six Weeks*

- | | | |
|----|--|-----|
| a. | Reading rate--190 wam up | --- |
| a. | Word lists. A vocabulary test of 50 words dictated within 5 or 6 minutes and a brief test of 100 words dictated at the rate of one every three seconds requires 95 per cent accuracy in the transcription of the shorthand outlines. | 10% |
| c. | Dictation tests (only the transcription is graded) | 80% |

Minimum requirements. Two tests passed.

Three minutes of dictation of new, non-previewed material dictated at 80 words a minute should be transcribed with 97 per cent accuracy.

*In schools offering only Shorthand I, the weight given to the various factors included in the grading the last six weeks may differ from the foregoing scale. For example, in such schools the transcription of mailable letters may constitute as much as 30 per cent of the grade.

STANDARDS SUGGESTED BY
THE TEXAS EDUCATION AGENCY

Bookkeeping I (first year)

Purpose

First-year bookkeeping has many personal-use or pre-vocational values which make it a desirable course for the high school student. With one year of bookkeeping, the student should be able to keep a simple set of books. Those persons following the clerical or stenographic concentration should understand the fundamentals of bookkeeping sufficiently well to keep books for small offices--those of a farmer, lawyer, or a social organization, for example. All students will find the course helpful in managing their own personal records and tax reports.

Objectives

1. To understand basic bookkeeping terms.
2. To understand debits and credits.
3. To understand and apply principles of double-entry bookkeeping.
4. To use business papers, forms, vouchers, and reports for record-keeping.
5. To develop the clerical skills related to bookkeeping.
6. To prepare bookkeeping statements, such as the balance sheet and profit and loss statement.
7. To practice accuracy and neatness in keeping records.
8. To understand the procedures used in keeping books for a small business enterprise.
9. To recognize and correct errors in records.
10. To analyze and interpret financial statements.

Vita was removed during scanning