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# A Comparative Study of Job Retention of Customer Service Employees

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**A Comparative Study of Job Retention  
of Customer Service Employees**

A Research Paper Presented to the Faculty  
of the Department of Occupational and Technical Studies  
Old Dominion University

In Partial Fulfillment of the  
Requirements for the Degree of  
Master of Science in Occupational and Technical Studies

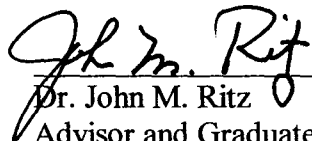
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December 2000

**SIGNATURE PAGE**

This research paper was prepared by Christine A. Visscher under the direction of Dr. John M. Ritz in OTED 636, Problems in Occupational and Technical Studies. It was submitted to the Graduate Program Director as partial fulfillment of the requirements for the Degree of Master of Science of Occupational and Technical Studies.

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# CHAPTER I

## INTRODUCTION

A critical factor in what makes an employee “successful” on the job is having the skills and skill levels to be able to perform job tasks effectively. This factor has become more important in today’s workplace, as corporations expect even entry-level workers to have thinking, reasoning, and teamwork skills, as well as high-tech skills, such as knowledge and use of computer software packages. Workers must show they have “fundamental skills” as well as “workplace competencies”. These include problem-solving and reasoning skills, identifying and allocating resources, participating as a team member, serving to meet customers’ expectations, acquiring and using information, and working with a variety of technologies. (Secretary’s Commission on Achieving Necessary Skills [SCANS], 1991)

Most companies in this country also must deal with global competition, thus focusing more on making operations cost effective in order to stay in business. Given this scenario, companies must evaluate the extent they are willing to train workers to perform the job versus hiring workers with all the requisite skills needed for effective job performance.

A further factor that influences this decision is the availability of skilled job applicants. Our nation’s companies are facing the growing situation of not finding skilled workers for their job openings (for example, thousands of high-tech job positions go unfilled in Northern Virginia). A lack of skilled job applicants occurs for companies

located in both urban and rural areas, and can be especially accentuated in rural areas where many job applicants have fewer opportunities to gain new skills both on an informal and formal basis. One such company in rural western Virginia has two customer service centers about seventy miles apart from each other, each located in a mid-sized community (from 5,000 to 19,000 population).

### **STATEMENT OF THE PROBLEM**

The problem of this study was to compare job retention of customer service employees who were screened for employment through Work Keys skills assessment with customer service employees who were employed without prior skills assessment.

### **RESEARCH GOAL**

The following hypothesis was used in this study:

H<sub>1</sub>: Customer Service Associate employees who were screened for employment by use of job-related skill level assessments will retain their employment for a longer period than will employees not screened for employment.

### **BACKGROUND AND SIGNIFICANCE**

The Western Virginia company's two customer service centers employ approximately 500 customer service associates, whose primary function is to provide directory assistance to customers requesting telephone numbers in a six state area, plus the District of Columbia. In an initial meeting with the researcher, company officials in one of the two centers (western center) requested assistance in reducing their high

turnover rate of employees, especially during the initial two weeks of employment, which consists of formal training prior to employees going “on-line.” They indicated that as many as 50% of new hires resign prior to completing the two weeks of training. They described the position as requiring employees to being able to pay attention to and remember procedures that involve details that are hard to notice and to be able to find several pieces of information while summarizing and comparing this information. They also indicated they did not use any job applicant assessments as part of their employment selection process.

Based on a preliminary search for employment assessment instruments that would be in compliance with EEO guidelines, the researcher found a limited number of assessment instruments that may have had application for these employees. Company officials agreed to the researcher performing a job profile (job analysis) of the customer service associate position in order to determine the skill requirements of the job and to establish criteria for job applicant selection. The Work Keys™ system, developed by ACT, was chosen as the method to document the skill requirements of the job, determine current skills of individuals, and to provide instructional support to learners in improving their skills. ACT developed the Work Keys national system in response to employers requesting a connection with learning and specific workplace skills. This system enables education and business to work together to strengthen the achievement of workplace skills, and it is designed to help businesses fulfill their needs for workplace skills in hiring and training by use of a common metric of generic workplace skills and skill levels. (ACT, Inc., 1995)



Sixteen customer service position employees at the western customer service center who were considered Subject Matter Experts (SMEs) participated in two profile sessions held in February, 1999. They reviewed and identified the most critical tasks to the job. Guided by these job task lists, the SMEs reviewed the descriptions of the Work Keys skills and determined the levels of Locating Information, Observation, and Reading for Information needed for both entry level and effective performance of the job tasks [See Appendix A: Work Keys Profile (name of company blocked at the request of the company)].

A company worker task force incorporated the recommendations for assessing job applicants to possess minimum skill levels, as part of their proposal for reducing overall costs for hiring and training new workers. This task force proposal was accepted by company officials that resulted in the addition of the Work Keys assessment of new hires as part of the overall employment process at the western center.

The employment process consisted of an initial job applicant screening by the company, which included a review of the job application information. If through the initial interview, the applicant met the expectations and requirements set by the company, he/she was referred to Dabney S. Lancaster Community College to take the Work Keys assessments in Locating Information, Observation, and Reading for Information, as well as a keyboarding test measuring keyboarding skills and speed. If the applicant's score met the established minimum job skill entry criteria, the company hired and trained the individual for directory assistance operator (customer service associate) for two weeks. If the new employee successfully completed the initial training, he/she began to take "live" calls (See Appendix B: Employment Process).

The researcher found limited information on studies that document the benefits of companies hiring workers whose skills match job requirements. Rather most research in this area has documented employers' need or desire to match workers skills with job requirements, but not actually doing so. Therefore, this study will attempt to fill in this gap and show the benefits of conducting such a study, both to employers, job applicants, employees, and educators.

### **LIMITATIONS**

The limitations of this study are identified as follows:

1. The number of employees retained for three months limited the data collected.
2. This research studied only one occupational title – Customer Service Associate.
3. The company where the study was conducted had a total employee level of about 500.
4. Wage levels and job conditions that may also have affected employees' retention rates were not considered or studied.
5. This study did not measure the possible differing characteristics (educational level, prior job history, age, gender, etc.) between the experimental group and the control group.

### **ASSUMPTIONS**

This study incorporated the following assumptions:

1. Matching job applicants with minimum skill levels required for the job to corresponding job openings is a desired outcome for both job applicants and employers.
2. Job satisfaction is negatively impacted for employees having less than the minimum skill levels needed for effective job performance.
3. The ACT Work Keys system is a proven, effective method of matching requisite work-related skills and skill levels between employers' specific occupational tasks and workers' skills.
4. As job retention of employees increase, employers have less hiring and training costs.

## **PROCEDURES**

Customer service associate job retention records of one control group and one experimental group were reviewed to determine the differences in retention rates between the groups. The control group consisted of 100% of new hires for the months of March, April and June, 2000, at the eastern company facility. All new hires in the control group were hired without a formal screening for job skills. The experimental group consisted of 100% of new hires for the months of March, April and June, 2000, at the western company facility. All new hires in this group were hired based on their meeting the established minimum job skills entry criteria including the Work Keys Skills Assessments. Retention for up to three months on the job was evaluated for both groups. The employer verified all the employee records for accuracy prior to them being given to the researcher for review and analysis.

## DEFINITION OF TERMS

The following terms were used throughout this study:

**Job Profile** – a job analysis involving the following steps: developing a list of the most critical tasks to the job; identifying the tasks associated with each Work Keys skill; identifying on-the-job behaviors associated with each skill as it is used on the job; and determining the Work Keys skill levels of the job.

**Job Retention** – the length of time an employee remains on the payroll with the same employer.

**Subject Matter Experts (SMEs)** – employees having firsthand knowledge of the requirements of a specific job.

**Work Keys Skills** – generic employability skills crucial to effective performance on most jobs:

- **Locating Information skill** – being able to use information taken from workplace graphics such as diagrams, floor plans, tables, forms, graphs, charts, and instrument gauges.
- **Observation skill** – paying attention to instructions and demonstrations and in noticing details.
- **Reading for Information skill** – being able to read and understand work-related reading materials.

## SUMMARY AND OVERVIEW

Chapter I introduced the problem of the study, which was to compare job retention of customer service employees, who were screened for employment through

Work Keys skills assessment with customer service employees who were employed without prior skills assessment. The hypothesis was outlined which predicted a positive correlation between having minimum skills for a particular job and job retention. The background and significance gave detailed information on the events leading up to the study and the merit of conducting such a study. The limitations provided the boundaries of this experimental study and the assumptions contained statements that the researcher believed to be true that had an affect on the study. The procedures identified the job retention records that would be reviewed for both the experimental and control groups. The definition of terms identified and defined the specific terms used in this study.

Chapter II provides a review of the literature relating to employment skills assessments and job retention. Chapter III explains the methods and procedures of the experiment, and Chapter IV presents the job retention from both control and the experimental groups. Chapter V concludes the study with conclusions and recommendations.

## CHAPTER II

### REVIEW OF LITERATURE

Presented in this chapter is a review of the literature related to this study's primary issues and factors. Background information and discussion is provided on the so-called "skills-gap" and the overall need for employees to have higher skill levels. Job readiness issues are reviewed, such as skills assessments that measure job applicants' skills related to job tasks. Finally, job retention issues are discussed, including the relation between skill levels and length of employment.

Major forces that have changed the American economy in the past twenty years have led to research from identifying what skills should be taught in schools to research outlining measurement of these skills. This research has included such studies as the "Secretary's Commission on Achieving Necessary Skills (SCANS), the Hudson Institute's research and resulting reports, Workforce 2000 and sequel, Workforce 2020, and the National Research Council Board on Testing and Assessment publication of research papers and proceedings, Transitions in Work and Learning – Implications for Assessment. These sources were reviewed as well as articles from abstracts and journals relating to skills assessment and job retention issues.

### WORKFORCE SKILL LEVELS

There has been increasing interest and recent focus on the "skills-gap" between the skills employers require workers to have and those skills workers possess. One of the major forces on the American economy has been the rapid pace of technological change –

especially in the areas of computing, telecommunications and biotechnology. The new technology has resulted in automation continuing to displace low-skilled or unskilled workers and the best jobs created being filled by workers who possess the skills required to successfully obtain them. (D'Amico & Judy, 1997, pp. 2-3)

Another major force is globalization and its impact for U.S. workers. Although manufacturing dominates U.S. exports, low-skilled and unskilled American workers compete with other low-skilled workers around the globe. Industrial workers change jobs frequently over time. Workers who maintain and improve their skills benefit with increased wages. Workers who resist training fall behind in the skills curve and are limited to performing certain types of jobs and in wage level attainment. (D'Amico & Judy, 1997, pp. 4-5) Specifically, those workers with proficiencies in math, science and the English language are in intense demand. One of the routes for filling the demand for highly skilled workers is to increase upward mobility through education and workforce development. (D'Amico & Judy, 1997, p. 84)

The fastest-growing jobs require much higher math, language, and reasoning capabilities than current or slowly growing jobs. Even in the majority of jobs in the medium to low skilled fields, workers are expected to read and understand directions, add and subtract, and be able to speak and think clearly. Job opportunities for unskilled workers are projected to be scarcer, as service industries are automated. (Johnston & Packer, 1987, pp. 99-101) A larger share of these fast-growing occupations will require education beyond high school but not necessarily a four-year degree. Obtaining skills in specific technologies that match the economy (employer needs) are more relevant than

obtaining a college degree in a field that does not match the labor market needs.

(D'Amico & Judy, 1997, pp. 137-138)

The SCANS report indicated that more than half of the nation's students leave school without the knowledge or foundation required for obtaining or holding a good job. This was directly attributed to the workplace changes that have resulted from globalization and new technology growth, creating conditions that have fundamentally changed work entry requirements. The report indicated that a high-performance workplace requires workers to have a solid foundation or "fundamental skills" in basic literacy and computational skills, in the thinking skills necessary to put knowledge to work, and in the personal qualities that make workers dedicated and trustworthy. High performance workplaces also require other competencies such as the ability to manage resources, to work amicably and productively with others, to acquire and use information, to master complex systems, and to work with a variety of technologies. These skills reflect the essential requirements for all students, both those going directly to the workplace after high school, and those planning further education. The report recommended that these identified competencies serve as a blueprint that would drive needed changes in education, the workplace, and associated assessment systems. (SCANS, 1991) An on-going National Job Analysis Study is being conducted by American College Testing to pursue further validation and elaboration of the SCANS framework. (American College Testing, 1994)

### **ASSESSMENTS OF WORKPLACE SKILLS**

Skills needed for performing job tasks are not directly observable to the employers at the time applicants are hired. In order to determine whether an applicant has



the required skills, the employer traditionally evaluates the applicant's level of education, previous job training or work experience, and references. During the interview, employers look for personal characteristics such as social and verbal skills and attitudes. Mismatches between jobs and workers could result from employers lacking information that would enable them to identify skilled applicants as well as evaluating skill levels among applicants. (Holzer, 1997, p. 11)

Holzer conducted a multi-city employer survey to some 3,200 employers in four large metropolitan areas between June 1992 and May 1994. He studied individuals who were responsible for the hiring of non-college workers in general or workers in specific occupations. The stratified random sample of employers was distributed across establishment size categories in roughly the same proportions as the overall labor force. The questions asked included the skills needed by workers and recruitment and screening methods used. (Holzer, 1997, p. 17) His data indicated that the rising need for basic skills was highest among non-college blue-collar and service jobs, where they have previously been in less demand. Most employers used screening methods that evaluated credentials such as education attainment, general and specific work experience, and previous training or certification. Holzer noted that the credentials are signals of an applicant's potential ability to perform a job. Employers also used a wide range of other screens to gauge these signals, and a variety of attitudes about various personal characteristics in making their hiring decisions. Written applications, personal interviews, and requests for references were almost universally used. Examples of other screens included non-physical tests, work samples, education checks, and criminal record checks. (Holzer, 1997, pp. 19-20)

Holzer has evaluated other recent employer surveys, where he has found similar trends in skills needed and deficiencies of skills in applicants. The National Federation of Independent Business survey indicated a different problem: the inability of employers to gauge whether an applicant possesses the necessary skills and personal characteristics given the limited information they have at the time of hiring. There were differences between expected performances at the time of hiring and performance measured later. In evaluating his survey results, Bishop (1993) recommended the need for a variety of ways in which matches between jobs and employees might be improved through a better provision of information to employers. Holzer concluded that making information about prospective worker skills more available to employers and improving their quality should help employers in their hiring decisions. (Holzer, 1997, pp. 23-27)

In the spring of 1995, the EQW (National Center on the Educational Quality of the Workforce) reported the results of the first analysis of its National Employer Survey – findings that documented just how much employers discounted information about a job applicant’s education when making hiring decisions. This first nationally represented survey tested the link between employers and schools. Managers and owners of over 4,000 establishments employing twenty workers or more were asked about their employment, training and hiring practices. (Zemsky, 1997, p. 38) It was intended that the EQW survey would provide a baseline for comparing employer attitudes and their estimation of employee’s skills and proficiencies. The survey also was intended to look at investments in both formal and informal training, the type of information they looked for when hiring new employees, and the contributions that these characteristics appeared to make to an establishment’s productivity. The results showed that only 5% of the

establishments reported any reduction in the skill requirements of their jobs, while 56% reported increased skill requirements. Almost all employers reported that they invested in employee training, but not in the areas of remedial training or basic education. (Zemsky, 1997, pp. 41-42)

In 1994, the Clinton administration promoted “Goals 2000: Educate America Act,” which established a National Skills Standards Board to encourage, promote, and assist partnerships representing business, labor, educators, and others in the development of industry-related skill standards. This initiative resulted from the recognition that there is currently little systematic connection between the skills needed in the workplace and skills learned through education and training.

The stated purpose of a national system of industry-based skill standards is to “identify the knowledge, skill, and ability levels needed for successful workplace performance.” Such a system would also ensure a common standardized way to classify and describe the skills and skill levels needed for particular occupations and would utilize a variety of evaluation techniques to assess the skills possessed by individual workers. This system would aid communication among employers, educators, trainers and workers regarding specific skill levels and needs. (Pearlman, 1997, p. 141)

Currently, there are a wide variety of methods and techniques to measure and assess worker attributes. These methods include: paper-and-pencil tests, physical ability tests, performance tests, job simulations, work samples, interviews, trainability tests, personality tests, direct job performance, observation and assessment, level of education, amount of experience or seniority, and work product assessment. Such techniques are not equally applicable to different categories of worker attributes. In general, aptitudes and

abilities, basic workplace skills, and occupation-specific skills and knowledge can be measured with reasonably high degrees of reliability and validity using appropriate methods of assessment. (Pearlman, 1997, p. 146) The identification and selection of employees with the capacity and motivation to learn, to be trained, and to be re-trained or “re-skilled” will increase in importance as employers build and retain their “intellectual capital”. (Pearlman, 1997, p. 150)

## **JOB RETENTION**

When reviewing various studies that addressed job retention, one common factor that was found in each source was the need for addressing worker satisfaction and the need by employers to keep the turnover rate as low as possible, thereby saving costs of hiring and training new workers. Employers need to increasingly focus on retaining skilled employees to cope with anticipated skill and labor shortages.

A study of job stability in the United States was conducted by Diebold, Neumark, and Polsky, and published in the Journal of Labor Economics in 1997. The researchers examined the temporal evolution of job retention rates in U.S. labor markets, using data assembled from the sequence of Current Population Survey job tenure supplements. The thrust of the research was on measuring changes in job stability rates relating to wage distribution over the 1980s and early 1990s. The researchers’ major finding was the approximate stability of aggregate job retention rates, which contrasted with pronounced shifts in the wage distribution. They did find some changes in retention rates by demographic groups that corresponded loosely to changes in the wage structure. In

particular, retention rates have declined for high school dropouts and high school graduates relative to college graduates. (Journal of Labor Economics, 1997)

A study conducted by Kansas State University examined the variables that influenced job retention at fast-food restaurants. Analysis of the survey indicated that employees quit their jobs because they perceived a lack of benefits in their work. The most significant variables associated with job retention of the employees were age, job position, intangible work rewards and conditional intention to leave. One of the recommendations made for fast-food companies to increase the length of employment was to focus on selection procedures for newly hired employees and for employees promoted to advanced positions, as well as ongoing training and development of employees and the increased use of tangible and intangible work rewards. (Nation's Restaurant News, 1992)

## **SUMMARY**

The need for workers to have skills that match employers' requirements, the need to have a universal system to train and measure these skills, and the relevance of having these skills to job retention and satisfaction has been documented in research studies and surveys. The growing rate of change in workplace technology and impact of globalization pinpoints the need for methods of measuring job applicants and workers skills and skill levels that have universal application.

The provision of assessment measurements of job applicant skills to match employers' skill needs has broad implications for assisting both employers and workers. Almost no research has been completed on the relationship between job applicant

assessment and job retention. Chapter III explains the research design used to determine whether job retention rates are affected by screening job applicants.

## **CHAPTER III**

### **METHODS AND PROCEDURES**

An experimental study design was used to determine if job retention rates of Customer Service Associate employees were affected by screening job applicants for job skills used by Customer Service Associates. This design allowed the researcher to evaluate and compare job retention records of Customer Service Associates employed at two separate sites of a western Virginia communications company. Records of one control group and one experimental group were reviewed to determine the difference in retention rates between the groups.

#### **POPULATION**

The target population was one hundred percent of all new applicants hired in the position of Customer Service Associate for the months of March, April and June, 2000 at both locations. The overall population was divided into one control group consisting of eighty-six employees located at the company's eastern site and one experimental group consisting of fifty employees located at the company's western site. The sites were about 70 miles apart in western Virginia.

#### **RESEARCH VARIABLES**

The independent research variable implemented with the experimental group was the requirement that all job applicants for the position of Customer Service Associate meet minimum job skills entry criteria including the Work Keys Skills Assessments prior

to being hired. Appendix B illustrates that DSLCC Work Keys assessments were used for this job screening as the independent research variable for the experimental group. All job applicants in this group were required to be tested in keyboarding, Reading for Information, Observation, and Locating Information, and meet or exceed the established minimum skill levels. Job applicants in the control group were not screened by any method for meeting minimum job skill levels prior to their being hired by the company, as shown in Appendix B.

Job retention was the one dependent research variable measured for both the experimental and control groups. The researcher evaluated the results of three months of job retention of each job applicant hired from both groups. The research design limited the number of extraneous variables that may have affected the results, as the groups were selected based on meeting a one-time event, that of being hired for the position.

### **INSTRUMENT USE**

Validated tests that assess generic workplace skills developed by American College Testing (ACT) were used to screen all Customer Service Associates in the experimental group. These Work Keys™ tests use the parallel forms method to insure reliability. Each test is criterion-referenced with respect to its content domain (i.e., each individual's skills are measured with respect to the content being assessed and independent of the performance of other examinees). Three test types were selected based on the job profile (job analysis) results of skills used on the job and ranked in the order of their importance: Locating Information, Observation, and Reading for Information. The job profile included the minimum skill levels required for job entry level.



All the assessments present workplace situations, reading materials and problems for examinees to respond to and/or solve. Within any given assessment, the situations represent many different jobs, occupations and workplaces. Locating Information and Reading for Information are presented in a booklet format with multiple-choice questions. Observation is presented in a video-based format with multiple-choice questions. Examinees do not need prior job-specific knowledge to do well on the assessments. Each assessment is constructed with a number of different levels and each successive level is more complex than the previous one.

### **FIELD PROCEDURES**

The company and Dabney S. Lancaster Community College had a formal agreement in place between July 1, 1999, and June 30, 2000, that specified the three Work Keys assessments enumerated above be conducted by the community college for all Customer Service Associate job applicants hired at the company's western site location, which became the source of the data for the experimental group. The company referred the applicants to the College for the assessments on a weekly or bi-weekly basis. The tests were computer scored. Overall scores showing skill levels on each applicant were sent to the company, and a test report, including scores, definitions of skills and skill levels, and ways to improve skill levels were sent to each applicant. The company hired the applicants who met the minimum skill levels.

Applicants, who were not hired, were referred to the community college for assistance in improving their skill levels. Individuals who went through this training,

confirmed by the community college to the company, were referred to re-take the specific assessment on which their previous score did not meet the minimum level.

### **METHODS OF DATA COLLECTION**

All the employment information of new hires for the months of March, April and June, 2000, was provided to the researcher for review and analysis, after the employer verified the data for accuracy. As the experimental study evaluated job retention for up to three months, these records were given to the researcher after September 30, 2000. The data elements reviewed, categorized and labeled were the date of hire and the date the employee left (if applicable). These elements enabled the reviewer to determine the number of employees still employed versus the number of employees no longer employed in the control group and experimental group.

### **STATISTICAL ANALYSIS**

The data from the control group and experimental group were analyzed using the chi-square method. This method was selected, as the researcher needed to determine the “frequency” of the job retention rate in both groups. The results enabled the researcher to determine whether there was any significant difference of job retention between the control groups and the experimental group.

### **SUMMARY**

The researcher developed an experimental method and followed specific procedures to document data from the communications company employees. The

research design included one control group and one experimental group. Employees from the experimental group were required to meet minimum job skill levels prior to being hired; employees from the control group were hired without this requirement. Work Keys Assessment tests were used to document job applicants' minimum job skill levels. Employee records showing data elements from the control group and experimental groups were reviewed. Chapter IV reports the findings of the job retention records' comparisons to determine any significant difference in job retention rates of Customer Service Associates.

## **CHAPTER IV**

### **FINDINGS**

The problem of this study was to compare job retention of customer service employees who were screened for employment through Work Keys skills assessment with customer service employees who were employed without prior skills assessment. The data and results of the research have been reported in the form of a table with an explanation provided of the methodology used to calculate the research findings.

### **FINDINGS**

The research goal was to test the following hypothesis:

H<sub>1</sub>: Customer Service Associate employees who were screened for employment by use of job-related skill level assessments will retain their employment for a longer period than will employees not screened for employment.

In order to test this hypothesis, the researcher needed to have sufficient and verified data from the company, including hire dates and separation dates when applicable, of all employees hired from both the western and eastern communication center sites for the months of March, April and June, 2000. The company provided the researcher with employee data that included the following information: employee code (different letter or combination of letters representing each separate employee), and hire and separation dates for each employee. The data was provided to the researcher after the end of July 2000, for the months of March and April 2000, and after the end of September 2000 for the month of June 2000. The information provided was sufficient for

the researcher to count the total number of customer service associates that were hired by each site for the months of March, April and June 2000, and then to count the total number of employees retained for three months, measured from three months after the hire date for each employee. Table 1 illustrates these number counts:

Table 1: Employment and Job Retention of Control and Experimental Groups

	Customer Service Associates		
	Control Group (communications company - eastern site)	Experimental Group (communications company - western site)	
New Hires and Three months Job Retention	Number of employees hired March, April and June 2000	86	50
	Number of employees retained for 3 months (measured at 3 months after hire date for each employee)	18	12
		B	A
		D	C

The chi-square method was then utilized to calculate this nominal data in order to determine the “frequency” of the job retention rate in both groups. The chi-square formula was used to compute the value in order to test the hypothesis, as shown below. Each of the four numbered cells in the above table matrix was labeled to correspond to the chi-square formula values. The value of N is the sum of A+B+C+D.

$$\chi^2 = \frac{N (AD - BC)^2}{(A+B) (C+D) (A+C) (B+D)}$$

$$\chi^2 = \frac{166 (900 - 1032)^2}{(136) (30) (62) (104)}$$

The chi-square value was computed at .1099 ( $\chi^2 = .1099$ ) with a degree of freedom of one (df = 1). This value was compared with levels of significance for a one-tailed test (as the hypothesis was predictive) and was less than 2.710 at the .05 (5%) level and less than 5.410 at the .01 (1%) level.

### SUMMARY

The researcher secured and computed data received from two separate sites, one site used for the control group, and the other used for the experimental group, of a communications company in Western Virginia in order to test the research hypothesis. Company verified information was received on all new hires for three months in 2000, as well as job retention on the new employees. The chi-square method was used to calculate whether there was any significant difference in job retention between the control group and the experimental group. The calculated results showed no significant difference in job retention between the groups. Chapter V summarizes the research study, provides conclusions based on the research goal and data collected, and makes recommendations based on the research results for this study and any future studies.

## **CHAPTER V**

### **SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

This chapter summarizes the research problem and goals, as well as the significance and limitation of the study. The population, instrument used and method of data collection are also provided, with an outline of the statistical procedures used to calculate the findings. Conclusions of the results are given based on the data collected. Finally, the researcher provides recommendations based on the results of the study and makes recommendations for future studies.

#### **SUMMARY**

A research study was conducted for the purpose of comparing job retention of customer service employees, who were screened for employment using ACT Work Keys™ skills assessments with customer service employees who were employed without prior skills assessments. The research goal was to test the following predictive hypothesis:

H<sub>1</sub>: Customer Service Associate employees who were screened for employment by use of job-related skill level assessments will retain their employment for a longer period than will employees not screened for employment.

The background and significance of the study gave detailed information on the events leading up to the study and the merit of conducting such a study. A western Virginia communications company had requested assistance in reducing their high turnover rate of employees, specifically that of customer service associates at the

company's western site location. The employer agreed to the researcher performing a job profile (job analysis) of the position in order to determine the skill requirements of the job and to establish criteria for job applicant selection. The Work Keys™ system, developed by ACT, was chosen as the method to document the skill requirements of the job and to determine current skills of job applicants, to be used as employment screening by the employer.

The limitations provided the boundaries of this experimental study and the assumptions contained statements that the researcher believed to be true that had an affect on the study. The limitations included the statements that the data collected were limited, the research studied only one occupational title at a relatively small company, and wage levels and job conditions that may have affected employees' retention rates were not considered or studied. Also, this study did not measure the possible differing characteristics (educational level, prior job history, age, gender, etc.) between the experimental group and the control group.

A review of the literature relating to employment skills and job retention was conducted. Many other researchers recognized the growing need for having adequate workplace skills and skill levels. The literature reviewed also indicated the need for assessment of workplace skills in order to select employees with the capacity and motivation to learn and be trained. The researcher found almost no research completed on the relationship between job applicant assessment and job retention.

The instruments used to screen all customer service associates in the experimental group were validated tests that assess generic workplace skills developed by ACT. Three test types were selected based on the job profile (job analysis) results of skills used on the



job and ranked in the order of their importance: Locating Information, Observation, and Reading for Information. The job profile included the minimum skill levels required for job entry level.

The procedures identified the job retention records that would be reviewed, and the definition of terms identified and defined the specific terms used in this study. The target population of the study was one hundred percent of all new applicants hired in the position of Customer Service Associate for the months of March, April and June, 2000, at the company's two sites: the control group was located at the company's eastern site and the experimental group was located at the company's western site.

Specifically, the researcher reviewed and compared the job retention records after three months from the hire date for each employee at both sites to determine whether there was a significant difference between the control and experimental groups. The chi-square method was then utilized to calculate this nominal data in order to determine the "frequency" of the job retention rate in both groups. The chi-square value was compared with levels of significance for a one-tailed test.

## **CONCLUSIONS**

The research goal was to test the following predictive hypothesis:

H<sub>1</sub>: Customer Service Associate employees who were screened for employment by use of job-related skill level assessments will retain their employment for a longer period than will employees not screened for employment.

The researcher reviewed, charted and computed the employment data obtained for the control and experimental groups. The chi-square value was computed at .1099 with a

degree of freedom of one ( $df = 1$ ). This value was compared with levels of significance for a one-tailed test (as the hypothesis was predictive) and was less than 2.710 at the .05 (5%) level and less than 5.410 at the .01 (1%) level.

As the significance of the difference of the chi-square value was less at both the 5% and 1% values, the researcher rejected the hypothesis and concluded that there was no significant difference of job retention between the control group and the experimental group. Thus the researcher concluded that there was no significant impact of the assessments used to screen job applicants in terms of later job retention after three months.

### **RECOMMENDATIONS**

As the hypothesis of this research was rejected, a further review of the study's limitations and assumptions needs to be made. Factors other than required minimum job skill levels were involved in the company's high turnover rate. Follow-up research to determine the effect of wage levels and working conditions on turnover rates is recommended. Also, differing characteristics of employees in each group, such as educational level, prior job history, age, gender, etc., may have had an impact on the study results. The researcher recommends the same hypothesis be tested at other companies of differing sizes, as well as with differing occupational groups to determine whether other factors are involved.

The review of literature indicated there is a positive correlation between employee skill levels and job satisfaction, rather than just job retention. Further research would be

helpful in evaluating this correlation and determining the difference between job satisfaction and job retention.

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## **APPENDIX A**

### **Work Keys Profile**

## Work Keys Profile

Job Title : **Customer Service Associate**

Profile Date : **02/03/99**

Number of SME Groups : **2**

Total Number of Subject Matter Experts (SMEs) : **16**

Skill	Entry Level	Performance Level	Range
Reading for Information	3	4	3-7
Applied Mathematics	X	X	3-7
Listening	X	X	1-5
Writing	X	X	1-5
Locating Information	3-4	4	3-6
Teamwork	X	X	3-6
Applied Technology	X	X	3-6
Observation	4	5	3-6

Briefly, profiling a job involved the following four steps:

1. Developing a list of the most critical tasks to the job;
2. Identifying the tasks associated with each Work Keys skill;
3. Identifying on-the-job behaviors associated with each skill as it is used on the job;

and

4. Determining the Work Keys skill levels of the job.

As the initial step, subject matter experts (SMEs), consisting of employees identified by your organization as having firsthand knowledge of the requirements of the job, reviewed a task list taken from the *Dictionary of Occupational Titles* for relevance and comprehensiveness. They deleted any tasks they considered unimportant, revised some task statements, and added tasks that they considered important to the job. The SMEs rated each task on both **IMPORTANCE** (i.e., the significance of the task to overall job performance) and **RELATIVE TIME SPENT** (i.e., the amount of time spent performing this task compared to that spent on the other tasks). The **CRITICALITY** of each task to the job (the multiplication of **IMPORTANCE** and **RELATIVE TIME SPENT**) was then calculated. The SMEs reviewed the list of tasks and their **CRITICALITY** ratings and revised the list so that only the most critical tasks remained.

Using this list of the most critical tasks, the SMEs discussed how the Work Keys skills (i.e., Applied Mathematics, Reading for Information, etc.) were required for performance of each task, and then identified the tasks associated with each skill (tasks could be associated with more than one skill). Guided by these new lists, the SMEs identified on-the-job behaviors and activities that required a particular skill, such as reading manuals, calculating the sum of a list of numbers, etc. Finally, the SMEs reviewed the descriptions of the Work Keys skills to determine the levels of Reading for Information, Locating Information, Listening, Writing, Applied Mathematics, Applied Technology, Teamwork, and/or Observation needed to perform the tasks of the job.

The resulting job profile as determined by the SMEs is presented in the table at the top of this page. The most critical tasks and a description of the Work Keys skills levels for this job are presented on the following pages.

## Customer Service Associate Profile Comments

### Executive Summary:

This job profile was completed for the position of Customer Service Associate at [REDACTED] to establish criteria for job applicant selection. Customer Service Associates locate and provide requested telephone numbers to customers from a database that covers six states and the District of Columbia. Sixteen employees who perform these tasks participated in two job profile sessions held February 3<sup>rd</sup> and February 5<sup>th</sup>, 1999 (eight in each session). Two separate profile sessions are required when the purpose of identifying the skill levels required for the job is used for either applicant selection or promotion.

The tenure of the employees who participated in the profile ranged from 11 months to almost four years, with an average tenure of two years. They reviewed three Work Keys skills which are all used on the job (Reading for Information, Locating Information, and Observation) in order to determine the requirements for entry level and effective performance of their job. Dabney S. Lancaster Community College staff and ACT Certified Work Keys Job Profilers, Christine Visscher, Gail Johnson, Ward Robens, and Gary Keener participated in and conducted both sessions.

### General Comments and Recommendations:

- ◆ Skill level requirements were identified for both entry level and effective performance on the job. Entry level refers to the requirements which are necessary for someone entering into the job. Although some of the skills indicate a higher level of skill is required for effective performance, all agreed that entry level employees could gain the needed level of the skill through exposure to the job demands and on-the-job training and experience.
- ◆ The entry skill level for Locating Information differed slightly between the two groups: 3/4 versus 3. It is recommended that Level 3 be accepted as the entry skill level.
- ◆ The performance level for Reading for Information differed between the two groups: the first group agreed upon Level 4, the second group upon Level 3. If used for training or performance, it is recommended Level 3, the lower of the two levels, be used to determine job incumbents' effectiveness.
- ◆ Although the profile was conducted for the purpose of applicant selection, the information from the profile can also be used for training and/or curriculum development purposes to assist job incumbents in achieving effective performance, and job applicants in achieving entry level requirements.
- ◆ The subject matter experts were chosen for the profile based on both their experience and knowledge of the job. The expertise they brought to the session supports their credibility as knowledgeable experts.

- ◆ The subject matter experts were asked at the end of each profiling session to rank the order of skills profiled in terms of how critical each skill is to performing the job. The results of this ranking as shown should be used to determine the priority of Work Keys assessments to administer.

**Ranked Order of Importance:**

- 1 Locating Information
- 2 Observation
- 3 Reading for Information

**Profile Session Comments:**

**Reading for Information:**

The subject matter experts highlighted the tasks on the final task list which require this skill. These tasks include reading training manuals and updates, employee handbooks, memos, posted information and methods and procedures. Most of the materials are short, simple and use elementary vocabulary, and some require procedures that involve more than one step. After reviewing three skill levels of Reading for Information, both groups agreed that Level 3 is required for entry into the job. At this level, new employees will be able to effectively read and interpret information. The first group determined that Level 4 is needed for effective performance on the job with the expectation that additional skills will be learned on the job. After some discussion, the second group indicated that Level 3 is the level required to perform effectively on the job as the reading materials are the same for both CSAs that are starting on the job and those who have experience in their positions.

**Locating Information:**

After reviewing the final task list, the subject matter experts identified tasks where this skill is used - locating requested telephone numbers from the data base, accessing the database directory, and referring to posted information such as county seats and conversions. They indicated that they must find more than one piece of information in these type of graphics and the information is basically straightforward. After reviewing four skill levels of Locating Information, the first group recommended that Level 3/4 (split level) is required for entry into the job, and Level 4 is required for employees to perform effectively on the job. After reviewing three skill levels of Locating Information, the second group recommended that Level 3 is required for entry into the job, and Level 4 is required for employees to perform effectively on the job.

**Observation:**

The subject matter experts indicated this skill is used in learning the required procedures for their job, scanning the monitor correctly. It is important that they pay attention to details while listening to customers and in providing the correct information. They agreed that most of the information provided is straightforward through learning by examples and practice, with opportunities given for questions and review. The subject matter experts in both groups agreed that Level 4 is required for entry into the job, and Level 5 is necessary for effective performance.



## **Skill Level Descriptions**

### **Reading for Information**

**Level : 3**

Employees must read basic company policies, procedures, and announcements. These workplace reading materials are short, simple, and use elementary vocabulary. All information employees need

in order to choose an appropriate course of action is stated clearly in the materials; employees do not need to read between the lines.

Employees are required to

- understand the meaning of words that are defined in these workplace reading materials.
- figure out the meaning of elementary words that are not defined in these reading materials.
- understand the main ideas and straightforward details from these reading materials.
- understand when to perform each step in a series from reading directions.
- be able to apply instructions outlined in these reading materials to situations described in these reading materials.

### **Reading for Information**

**Level : 4**

Employees must read straightforward company policies, procedures, and announcements which contain a number of details and describe procedures which involve several steps. Many of the reading materials describe policies and procedures which require employees to take changing circumstances into account in identifying the course of action which will best accomplish their goals.

Employees are required to

- notice important details in these reading materials.
- figure out the meaning of words that are not defined in these reading materials.
- apply instructions, some of which involve several steps, to situations described in these reading materials.
- take changing circumstances into account in order to decide what to do.

### **Applied Mathematics**

**Level : X**

This skill is not required on the job, or less than the lowest level is required.

### **Listening**

**Level : X**

This skill is not required on the job, or less than the lowest level is required.

### **Writing**

**Level : X**

This skill is not required on the job, or less than the lowest level is required.

### **Locating Information**

**Level : 3**

Employees must read elementary workplace graphics such as simple order forms, bar graphs, tables, flowcharts, maps, instrument gauges, and floor plans.

Employees are required to

- find one or two pieces of information in these types of graphics.
- fill in one or two pieces of information that are missing from these types of graphics (usually forms).

**Locating Information****Level : 4**

Employees must read straightforward workplace graphics, such as basic order forms, line graphs, standard tables, basic diagrams, flowcharts, instrument gauges, and maps.

Employees are required to

- find several pieces of information in these types of graphics.
- summarize and/or compare information and trends in a single graphic.
- summarize and/or compare information and trends among more than one workplace graphic, such as a bar chart and a table showing related information.

**Teamwork****Level : X**

This skill is not required on the job, or less than the lowest level is required.

**Applied Technology****Level : X**

This skill is not required on the job, or less than the lowest level is required.

**Observation****Level : 4**

Employees must pay attention to and remember a procedure that involves some details that are hard to notice. The tasks are performed at a moderate pace, and some extra details and/or distractions are present. Although the procedure is normally routine and somewhat under the employee's control, the employee must be alert for important details and exercise judgement in determining which of those to pay attention to.

Employees are required to

- select and pay attention to important details (but not all details) of a straightforward procedure.
  - pay attention to details that are shown at a moderate pace.
  - remember a few important, reinforced details.
  - remain focused on details despite some extra details and/or distractions.
- notice less obvious differences.

**Observation****Level : 5**

Employees must pay attention to and remember work procedures that involve several tasks which may occur at the same time and/or outside the employee's control. Tasks are performed at a moderate pace, often interact with each other, and may change from one situation to another. The employee must examine differences and figure out if the differences are important to note (e.g., detect differences from standards and figure out if the differences are big enough to report). There are often several extra details and/or distractions that may make it difficult for the employee to pay attention to the important elements.

Employees are required to

- focus attention on and remember several important details from a complex series of events that may occur at the same time.
- pay attention to details that are presented at a moderate pace.
- maintain attention to detail with little prompting.
- ignore irrelevant background information or distractions by only paying attention to important points.
- recognize several differences presented at the same time or examine a subtle difference to judge if it is an acceptable difference.

## **Final Task List**

- 1** Follows proper call procedures with customers, such as keying strategies, scanning monitor, and following the format for "not found" listings.
- 2** Has thorough knowledge of keyboard, database, and monitor to receive and direct incoming calls for assistance.
- 3** Provides prompt, courteous customer service.
- 4** Uses proper phrasing and appropriate language to professionally interact with customers.
- 5** Listens and questions customers to determine accurate spelling.
- 6** Uses good time management skills regarding attendance, punctuality, breaks, lunch, etc. to ensure adequate operator coverage.
- 7** Works independently, assessing the needs of the customer while exercising good judgement.
- 8** Effectively interacts with customers from all over the world by telephone, making suitable offerings/suggestions when appropriate.
- 9** Completes a request in 30 seconds on average, after being on the job for six months.
- 10** Routes calls to CSS (Customer Service Specialist) for data discrepancies or when challenged or requested by customers.
- 11** Uses tools to help complete calls, such as county seats and conversions.
- 12** Understands how assigned work contributes to the success of CFW Communications.
- 13** Works safely to prevent on-the-job injuries by adhering to ergonomic training.
- 14** Reports equipment problems promptly.
- 15** Completes initial two weeks of training and training updates, as required.
- 16** Suggests improvements in work methods and procedures.
- 17** Informs supervisor of any questions, problems or concerns regarding job functions.

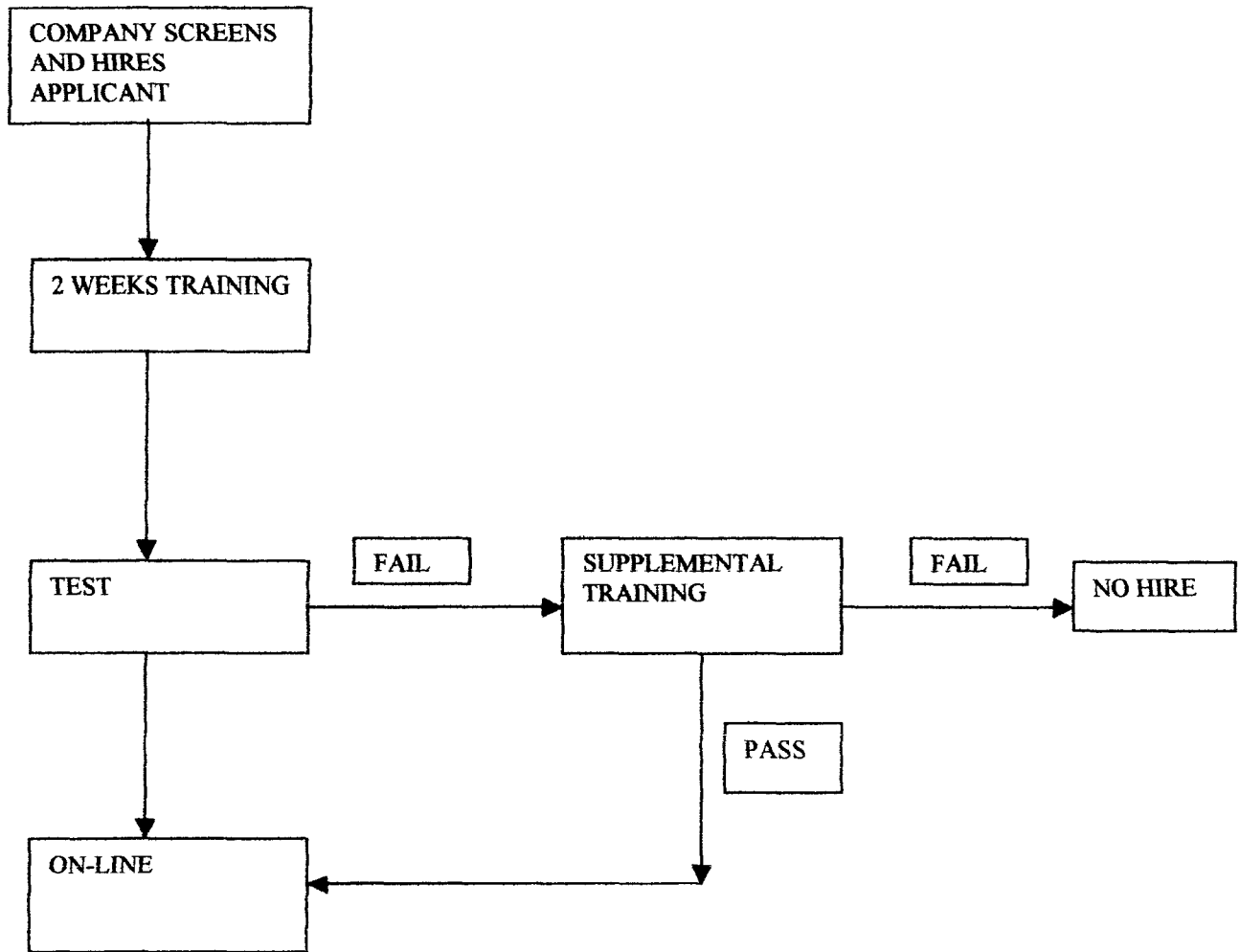
## Final Task List

- 1 Locates requested telephone numbers from database.
- 2 Operates keyboard and monitor to receive and direct incoming calls for assistance.
- 3 Works independently, listens attentively, assessing the needs of the customer while exercising good judgement.
- 4 Accesses database directory by using proper keying strategy for location and name of request on computer terminal keyboard, and scans monitor to locate number.
- 5 Communicates in a polite and professional manner to customers in any situation
- 6 Understands how providing prompt, courteous customer service contributes to the success of CFW Communications.
- 7 Effectively interacts with customers from all over the world by telephone, making suitable offerings/suggestions when appropriate.
- 8 Provides telephone number verbally to customer when two numbers are requested.
- 9 Refers to posted information to answer questions and to identify alternate locations and spelling under which number could be listed.
- 10 Completes a request in an average work time (AWT) of 30 seconds, after being on the job for six months.
- 11 Learns geographic localities serviced on an on-going basis.
- 12 Completes initial two weeks of training and training updates, as required.
- 13 Routes request for assistance to CSS (Customer Service Specialist) when initial procedures result in a not found report and is challenged by a customer.
- 14 Works safely to prevent on-the-job injuries by adhering to ergonomic training.
- 15 Reports data discrepancies and equipment problems promptly.
- 16 Works varied schedules.
- 17 Informs supervisor of any questions, problems or concerns regarding job functions.
- 18 Suggests improvements in work environment.

## **APPENDIX B**

### **Employment Process**

# EMPLOYMENT PROCESS AT COMPANY'S EASTERN SITE (CONTROL GROUP)



# EMPLOYMENT PROCESS AT COMPANY'S WESTERN SITE (EXPERIMENTAL GROUP)

