PERCEIVED USE OF THINKING SKILLS IN
CUSTOMER SERVICE ASPECTS OF BANKING

by

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Dissertation submitted to the graduate Faculty of the
Virginia Polytechnic Institute and State University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

in

Vocational and Technical Education

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July 1993

Blacksburg, Virginia
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(ABSTRACT)

The purpose of this study was to identify instances when workers in a business environment used thinking skills, including creative thinking, decision making, and problem solving in a manner that was beneficial and to examine how they perceived they acquired thinking skills. Twenty-seven banking employees from nine branches were interviewed using the behavioral event interview method. The nine branches represented three banks operating in Virginia. At each branch, a manager, a new account representative, and a teller were interviewed.

The behavioral event interview method was selected as it has been a successful tool in both industrial and educational settings. Additionally, its purpose is to identify competencies necessary to do a given job well. The tape recorded interviews were transcribed and yielded a total of 55 behavioral events. The events were reviewed and instances of creative thinking, decision making, problem solving, and combinations of the three were identified and coded according to definitions presented in the study. Sixty-two instances of thinking skill use were identified within the events.

Instances from the interviews of creative thinking, decision making, problem solving, and combinations of these were presented. Further, two interrelated themes emerged from the instances of thinking skill use. The first theme involved the generation of new ideas, determining the best alternative, implementing an alternative,
or a combination of these in order to generate business or sales for the bank. The second theme involved the generation of new ideas, determining the best alternative, implementing an alternative, or a combination of these in order to solve a known problem.

This study revealed that the interviewees did not receive formal thinking skill preparation from education or work training programs. They attributed most of their thinking skill development to experience. Outcomes of this study can be used to teach thinking skills by the infusion approach, the most commonly used method for teaching these skills. It relies on the skills being taught in real-life contexts.
DEDICATION

I dedicate this dissertation to my wife, Diann, and son, Zach. Both of you have given me the strength to accomplish this project. Additionally, the two of you enable me to continue toward my other goals and dreams.
ACKNOWLEDGMENTS

This dissertation was made possible with the assistance and cooperation of several individuals. Dr. B. June Schmidt, Committee Chair, deserves special recognition for her patience, understanding, and guidance. She has taught me so much about research and writing, as well as personal hints that I can take with me always.

I would like to offer special recognition to Dr. Jeffrey R. Stewart. He introduced me to business education, served on my doctoral committee, and has offered guidance along the way.

Dr. Curtis R. Finch deserves special thanks for his research guidance and serving on my doctoral committee. This study may not have been possible without his help and research skills.

I wish to thank Dr. Daisy L. Stewart and Dr. Vittorio A. Bonomo. They unselfishly served on my committee and provided much needed insight for this study.

Additionally, I would like to recognize Sheila Tucker, Eleanor Stevens, and Susan Kandies for their help with the transcribing of the interviews. Further, Jerry Kandies, Stephen Nelson, Christine O'Keefe, and Michael O'Keefe deserve recognition for verifying the accuracy of the transcriptions.

Most importantly, I wish to thank my family for their understanding.
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Chapter 1

THE PROBLEM

Psychologists' interests in thinking skills are based in two well established psychological theories, cognitive and metacognitive. Cognitive theory is centered around thinking, language, and problem solving (Snelbecker, 1985). Ashcraft (1989) described cognition as the mental processes of perceiving, remembering, and thinking, and the act of using these processes to organize mental activities. Further, Ashcraft used the term metacognition to refer to people's own ability to monitor their cognitive state and assess their thought process. Hence, metacognition is a never ending process whereby individuals continually evaluate and improve their thinking process. It is believed to be essential for teaching people to think (Costa, 1984; Presseisen, 1987).

Willis (1992) and Lambrecht (1992) have identified three approaches to teaching thinking skills that are used most often today: general, infusion, and immersion. The general approach, which both of these authors consider the least commonly used approach, calls for thinking skills to be taught out of context. The infusion approach, which they perceive as most commonly used, calls for thinking skills to be taught within specific content areas. The immersion approach calls for thinking skills to be taught through the creation of a classroom environment that fosters thinking (Willis, 1992; Lambrecht, 1992).

Recent interest in thinking skills has been spurred through a political document known as America 2000: An Education Strategy. It was adopted by President George Bush in 1991 and calls for workers to possess a greater knowledge of thinking skills (U.S. Department of Education, 1992). The America 2000 strategy centers around six national goals of education to be achieved by the year 2000. The third and fifth goals are the ones that relate to the focus on thinking skills. The third goal calls for
secondary students to become competent in English, mathematics, science, history, and geography. This goal requires secondary students to learn how to use their minds so that upon completion of secondary education they will be qualified to engage in further education or productive employment. The fifth goal calls for all U.S. adults to possess necessary skills and knowledge to compete globally.

Goals three and five have, thus, led to increased emphasis on thinking skills. Further, the Secretary's Commission on Achieving Necessary Skills (SCANS) report, proposed by a commission sponsored by the U.S. Department of Labor (1991), is primarily concerned with these two goals. It emphasizes the need for thinking skills. The commission was formed to define exactly the skills needed to hold a job and earn a living. The commission, which examined the requirements that work places on schools, noted that students need proficiency in five competencies, including resources, interpersonal, information, systems, and technology. Additionally, the commission reported students need proficiency in three foundations, including basic skills, thinking skills, and personal qualities.

Thinking skills have also been emphasized through the Carl D. Perkins Vocational and Applied Technology Education Act (1990) which requires the integration of academic and vocational education. Schmidt, Beeken, and Jennings (1992) identified two broad-based goals of integration which support the thinking skills emphasis. The first is to provide occupational, academic, and higher-order skills, including thinking, to all students. This goal is aimed at helping students function effectively in a technically advanced society, information based economy, and globally competitive marketplace. The second goal of integration is to utilize the findings of cognitive psychologists to enhance students' learning. This goal focuses on students’ developing academic and problem solving skills simultaneously, being encouraged to
recognize and solve problems, and experiencing hands-on learning that reinforces academic skills.

Further, examination of work today reveals the importance of thinking skills. Today's workers confront increased international competition; quickly changing consumer demand, requiring special order goods; and rapid innovation and technological developments that require higher level skill development (Bailey, 1990, May; Bailey, 1990, Spring). They must possess job-related communication, mathematics, and science skills, and they need a number of higher order thinking skills (Johnston & Parker, 1987; Carnevale, 1991).

As an example, the banking community is not immune from rapid changes that require superior customer service and the use of thinking skills (Bailey, 1990, May; Bennett, 1992, January). Customer service is the key to maintaining a competitive advantage that enables banks to sustain long-term growth and profitability in a time of mergers, acquisitions, downsizing, and decreased profitability (Bennett, 1992, January; Lewis, 1992; Lunt, 1992). Bankers have recognized the importance of customer service, thus they have begun increasing investments in technology, improving employee training, and boosting employee commitment to customer satisfaction (Bellet, 1992; Sullivan, 1992; Streeter, 1992; Braitman, 1992).

Purpose of the Study

Thinking skills are grounded in cognitive and metacognitive psychological theories. Recent political action and research have emphasized their importance. However, an examination of the current literature reveals a lack of knowledge concerning specific examples of events or situations that require the use of thinking skills in a business environment. Specifics of these events are needed as a basis for teaching thinking skills by the infusion approach, the most commonly used approach
for teaching them. A lack of information about the use of thinking skills in context
hinders the teaching of thinking skills (Willis, 1992). Further, a number of authors
(Barthel, 1992; Miller, 1992; Bellet, 1992; Lunt, 1992) support customer service as an
important aspect of banking today and in the future. Yet, an examination of the
literature reveals no link between preparing individuals for customer service
responsibilities and development of thinking skills. Additionally, an examination of the
literature reveals no evidence supporting how thinking skills are acquired by those
individuals working in a business environment, including banking. The purpose of this
study was to identify instances when workers in a business environment used thinking
skills in a manner that was beneficial and to examine how they perceived they acquired
thinking skills.

Research Questions and Methodology

To accomplish this purpose, the focus of this study was narrowed to the
customer service aspect of banking. The literature revealed that customer service is
essential in the banking environment (Bennett, 1992, January). Further, the literature
illustrated that current changes and demands force thinking skills to become a necessary
component of banking customer service (Bailey, 1992, May). This study examined the
use of thinking skills in customer service duties of three levels of bank employees:
branch manager, new account representative, and teller. The subjects represented in
this study are full-time employees of banks operating in Virginia. Further, the thinking
skills examined were limited to creative thinking, decision making, and problem
solving. These three thinking skills were selected because they are common to one of
Presseisen's models of cognition which includes the complex thinking processes of
creative thinking, decision making, problem solving, and critical thinking (Presseisen,
1987) and the SCANS set of thinking skills which includes creative thinking, decision
making, problem solving, seeing things in the mind's eye, knowing how to learn, and reasoning (U.S. Department of Labor, 1991).

Following are the research questions of this study:

1. What perceived thinking skills were used in customer service events that bank employees believed to be beneficial?

2. How do bank employees perceive they acquired thinking skills?

The researcher used behavioral event interviews to gather the data for this study. This approach was selected because it allows the researcher to obtain details of events that involve bank employees' use of thinking skills. Additionally, an interview instrument was developed and field tested prior to the data collection. Three distinct levels of bank employees (branch manager, new account representative, and teller) were interviewed at three different branches of three different banks.

Significance of the Study

This study improved knowledge related to the psychological base of thinking skills by providing real-life events that require bank employees to use thinking skills. These events can be used to facilitate the teaching of thinking skills. This study provided insight into the uncertainty that exists regarding how thinking skills are used and developed. It helped to determine whether thinking skills were taught to banking employees and under what circumstances. Further, it provided insight into the extent that employees need thinking skills to perform the customer service aspect of their work. Examining the importance and amount of work time devoted to the use of thinking skills substantiated the need for emphasizing these skills in instructional settings.

Various studies (U.S. Department of Labor, 1991; Bishop, 1988; Berlin & Sum, 1988; Dronka, 1988; Fitzgerald, 1986; Johnston & Parker, 1987; Carnevale,
1991; Bailey, 1990, May) provide support for the use of thinking skills in the workplace. However, a review of the literature revealed nothing that focuses solely on thinking skills as they are used in specific job situations and, thus, became qualifications for the job. This study is an initial effort to begin filling that void through examining the use of thinking skills in the customer service aspect of banking.

The SCANS report has illustrated that a political interest in thinking skills exists. Additionally, the commission has noted a limitation of their emphasis. They state: "Employers should be careful to conduct their own in-house research to verify the applicability of SCANS competencies and foundations to their jobs. Although the job analyses reported here were carefully conducted and produced reliable results, they cannot automatically be applied to particular jobs in specific organizations." (U.S. Department of Labor, 1992b, 1-11). Thus, specific employees' workplace activities must be examined to document actual use of thinking skills. This study will provide a basis for further examination of thinking skills used in the workplace of banks and other businesses, industries, and service organizations as well.

Reinforcement of thinking skills is an underlying tenant of the integration of academic and vocational education. The Carl D. Perkins Vocational and Applied Technology Education Act of 1990 requires the use of this integration that reinforces thinking skills. The act notes that thinking skills must be examined in the workplace to determine how they are used and the extent that they are used. This study will help determine if this legislation is placing emphasis on skills really essential for the workplace.
Definitions

The terms defined for this study are as follows:

**Thinking Skills:**

**Creative thinking**--academically defined as utilizing basic cognitive or thinking processes to create novel or aesthetic ideas or products (Presseisen, 1987); practically defined for this study as generating novel or new ideas

**Decision making**--academically defined as utilizing basic cognitive or thinking processes to choose the best response among several choices (Presseisen, 1987); practically defined for this study as evaluating and choosing the best alternative

**Problem solving**--academically defined as utilizing basic cognitive or thinking processes to solve a known obstacle (Presseisen, 1987); practically defined for this study as recognizing problems and developing and implementing solutions

**Bank Employees:**

**Branch manager**--responsible for all aspects of the branch operation, including branch finance, business transactions, personnel, and customer relations (Wright, 1984)

**New account representative**--responsible for soliciting new accounts and selling new services to old and new customers; a sales representative for the bank (Wright, 1984)

**Teller**--responsible for taking money when customers make deposits, giving money when customers make withdrawals or write checks, exchanging foreign currency, receiving loan payments, and issuing travelers' checks (Lidz & Perrin, 1987)

**Other Terms:**

**Event**--something that happens, especially something important (Ehrlich, 1980); practically defined for this study as a situation described by an interviewee
Customer service--performing work for a person who buys goods or services from a business (Ehrlich, 1980)

Beneficial--having a helpful or useful effect (Ehrlich, 1980); practically defined for this study as a perception of the interviewee pertaining to an event outcome that was helpful to the bank, the customer, the interviewee, or a combination of these

Delimitations

1. This study was delimited to a purposive sample of employees in banks operating in Virginia in the spring of 1993. The banks were on record at the Richmond Office of the Federal Reserve Bank on June 30, 1992. Further, the banks selected were large asset sized banks to ensure that the bank branches had three levels of employees available.

2. This study included only bank employees working full-time during the spring of 1993.

3. This study investigated only creative thinking, decision making, problem solving, and the combinations of these three as thinking skills. Other thinking skills that may have been used by the bank employees and described in their interviews were not examined.

4. This study focused only on the use of thinking skills by bank employees in their conduct of customer service duties.

Organization of the Study

This chapter provided the introduction and background, purpose, research objectives and methodology, significance, definitions, and delimitations.

Chapter 2 contains a review of the relevant related literature.

Chapter 3 includes a description of the methodology of the study.

Chapter 4 presents the results of the study.
Chapter 5 provides the summary and discussion based on the research results. The chapter also includes recommendations for future research.
Chapter 2

REVIEW OF THE LITERATURE

Psychological Background

A review of the literature indicates that much research has been conducted to
determine how people think and improve their thinking process. Additionally, a
number of theorists have focused on determining how thinking can be made part of the
educational curriculum (Bruner, 1960; Chipman & Segal, 1985; Jones, 1986;
Presseisen, 1986; Sternberg, 1985). The past psychological focus which continues as
today's focus for thinking processes has been on cognition and metacognition
(Presseisen, 1988).

Cognition is the organization of mental processes and activities used in
perceiving, remembering, thinking, and the act of using those processes (Ashcraft,
1989). Cognitive theories of learning place thinking, language, and problem solving at
the center of the learning process (Snelbecker, 1985). Early 1900s theories relied on
simple learning processes to explain complex learning theory and to facilitate
measurement and observation of cognitive processes. However, cognitive theorists
have traditionally been critical of this process (Snelbecker, 1985). A host of attempts
have been made to define the exact skills involved in the cognitive process (Beyer,
1984; Costa, 1985; Marzano et al., 1988; Presseisen, 1987; Sternberg, 1981). These
attempts led to a list of constructs that identify the thinking process. Additionally, two
explanatory models of cognition were developed by Presseisen (1987). The models are
based on a thorough review of research and are believed to depict current beliefs
regarding thinking skill processes. The models were developed for and are currently
being used by the Baltimore City Public Schools in grades K-12.
The first model handles the basic processes or essential thinking skills. This model covers five processes. The first and least complex of these is qualification, meaning finding particular characteristics. An example of qualification is recognizing three sided drawings as triangles. Moving upward in complexity, the second process is classification, meaning determining common characteristics. For example, students learn the definition of homonyms. The third process, relationships, is the ability to detect generalized operations. An example of this would be students recognizing the next number in a sequence. Transformations, relating what is known to the unknown, is the next process in terms of complexity. An example would be recognizing simple analogies. The most complex of the simple processes, causation, is establishing cause and effect relationships, such as determining why something is the way it is (Presseisen, 1987).

The second model handles complex thinking processes or skills. The skills are placed into one of four categories with each incorporating one or more of the levels from the basic model. The complex thinking skill model categories are problem solving, decision making, critical thinking, and creative thinking (Presseisen, 1987).

Metacognition refers to people's ability to monitor their own cognitive state and assess how successfully their memory and thought processes are operating (Ashcraft, 1989). Metacognition is believed to be central for teaching people to think (Costa, 1984; Presseisen, 1987) and hold the most lasting influence on the student (Chipman & Segal, 1985). Metacognition itself is a never ending process of evaluating and improving the thinking process (Costa, 1985; Sternberg, 1983). Willis (1992) links the never ending process to three phases. These are planning, monitoring, and evaluating one’s own thinking. Willis also reports that students can enhance their thinking by becoming aware of it. Willis suggests exercises, such as allowing students to write in
journals about their thinking, to stimulate metacognition. Jean Piaget and followers have been concerned with developmental changes of a person's information handling ability and consider learning as part of development (Snelbecker, 1985).

Thinking Skills Defined

Presseisen (1987) defined creative thinking as utilizing basic cognitive or thinking processes to create novel or aesthetic ideas or products. Further, creative thinking is a major building block of cognitive education because creativity enables people to derive multiple solutions to identical problems. Therefore, creative people do not view problems as having only one right solution. They learn to use intuition, perception, and formulate questions. Additionally, observation and interviews of Baltimore City secondary school students has shown creative people generally have more ideas (Presseisen, 1987).

Presseisen (1987) defined decision making as utilizing basic cognitive or thinking processes to choose the best response among several choices. Decision making may be viewed as an aspect of problem solving. However, most experts view the ability to decide as a different thinking process entirely. Decisions are made based on the information available at a given time, and as more information becomes available the decision improves in quality. Since decisions are made with time limited information, the decision is not generalizable. As a rule, a decision is reached after a goal is defined; obstacles to achieving the goal are defined; and alternatives are identified, analyzed, and ranked (Presseisen, 1987).

Presseisen (1987) defined problem solving as utilizing basic cognitive or thinking processes to solve a known obstacle. This differs from decision making in that the results of problem solving may be generalizable. Observation of secondary school students in Baltimore has shown better problem solvers strive to clearly represent the
problem. Problem solvers rely on current information and prior knowledge (Presseisen, 1987).

Teaching Thinking Skills

Educators agree that students must possess thinking skills to succeed in today's world and in the future. However, disagreement exists regarding the best method for teaching students how to think (Willis, 1992). Lambrecht (1992) described three approaches to teaching thinking skills. These are the general, infusion, and immersion approaches.

The general approach calls for thinking skills to be taught utilizing specialized instruction outside of the content specific area (Lambrecht, 1992). Lambrecht (1992) and Willis (1992) further point out that experts doubt the value of teaching thinking out of context. This doubt is based on the lack of evidence supporting people’s ability to transfer and apply generic thinking skills learned out of context. Willis (1992) reported experts believe the general approach to be the least common of the three approaches because it requires students take an additional class. Additionally, care must be taken in the program development stage to ensure that class lessons actually do foster thinking. However, this can be overcome by purchasing previously developed program materials that are available and ready to be implemented as a course for educators desiring to use this method (Willis, 1992).

The infusion approach calls for thinking skills to be taught within the context of specific content areas (Lambrecht, 1992). Willis (1992) reports that experts believe the infusion of thinking skills into regular class lessons is the most popular method of teaching thinking skills. Further, educators following this approach directly teach thinking skills in the context of subject matter content. This approach supports the notion that thinking itself is content specific. Some educators promote the teaching of
thinking skills in a content that the students already know and understand to ensure that the material is not confusing the students to allow them to concentrate on developing thinking skills, not learning new material. Decision making, problem solving, analyzing, predicting, hypothesizing, remembering, inferring, comparing and contrasting, and deductive reasoning are the thinking skills taught most often using this approach (Willis, 1992).

The immersion approach calls for the teaching of thinking skills through the creation of a classroom environment that fosters thinking without making the thinking skills explicit (Lambrecht, 1992). Willis (1992) notes that educators practicing this method may use questioning techniques that prompt students to refine and clarify their thinking. The questions are designed to foster higher-order thinking and not just recall. The lesson itself may be structured around issues or problems that encourage higher-order thinking. Directly teaching thinking skills is not part of this method of thinking skill development. Experts agree the main disadvantage of this method is the difficulty teachers have in developing the questioning techniques (Willis, 1992).

Despite the three approaches to teaching thinking skills, a case study of a metropolitan medical center revealed that thinking skills are not taught (LaParo, 1991). In this study, critical incident interviews were conducted with 20 middle managers and two administrators to determine their perceptions of their learning. Results showed no evidence of critical thinking skill development had ever been offered to the subjects.

Experimental research was conducted to determine whether learning to program computers in either BASIC or LOGO languages affected critical thinking skills in adult students (Sattler, 1987). Students, mostly majoring in education and business and ranging in age from 18 to 56, were enrolled in the equivalent of a three semester hour course in the two computer languages. Pre and post tests were analyzed using analysis
of variance revealing that learning to program computers in either BASIC or LOGO had no influence on thinking skills as measured by the Watson-Glaser Critical Thinking Appraisal. An analysis of covariance revealed that previous computer experience, age, and gender also had no impact on thinking skills.

Garrett (1988) argued that current cognitive development methods are inadequate and suggested using data flow diagrams as a means of teaching thinking processes. Advantages of the data flow diagrams include the ability to locate where the student is developmentally, identify what needs to be taught, and show how the whole cognitive process relates. Further, expert systems were introduced as a means of delivering the instruction.

In a related study, a statistical relationship was found to exist between thinking skill attainment and moral development (Stewart, 1991). Additionally, the study of 290 Michigan State University and 147 Aquinas College students was representative of both campuses and showed a strong correlation between self-concept and critical thinking ability. Moral development, critical thinking, and self-concept were measured using the Defining Issues Test, Watson-Glaser Critical Thinking Appraisal, and Tennessee Self-Concept Scale respectively.

Government Policy and Thinking Skills

Recent political interest in thinking skills has risen from America 2000: An Education Strategy. America 2000 was adopted by President George Bush and the Secretary of Education, Lamar Alexander, on April 18, 1991 as the result of a conference sponsored by the President for the governors of the 50 states. The purpose of the conference was to address national concerns about the status of education due to statistics depicting inadequate educational preparation in the United States (U. S. Department of Education, 1992). In addition to its stated purpose, America 2000 was
the foundation for later emphasis given thinking skills in a report from the Secretary's Commission on Achieving Necessary Skills (SCANS) (U.S. Department of Labor, 1991).

The America 2000 strategy calls for the United States to achieve six national goals of education by the year 2000. The six goals follow: (1) All children in America will start school ready to learn. (2) The high school graduation rate will increase to at least 90%. (3) American students will leave grades four, eight, and twelve having demonstrated competency in challenging subject matter including English, mathematics, science, history, and geography; and every school in America will ensure that all students learn to use their minds well, so they may be prepared for responsible citizenship, further learning, and productive employment in our modern economy. (4) U.S. students will be first in the world in science and mathematics achievement. (5) Every adult American will be literate and will possess the knowledge and skills necessary to compete in a global economy and exercise the rights and responsibilities of citizenship. (6) Every school in America will be free of drugs and violence and will offer a disciplined environment conducive to learning (U.S. Department of Education, 1992). Of the six goals, numbers three and five relate to thinking skills emphasis.

The Secretary's Commission on Achieving Necessary Skills (SCANS) yielded further political interest in thinking skills. SCANS was established in 1990 by Elizabeth Dole who, at the time, was Secretary of the Department of Labor (Whetzel, 1992). SCANS was formed to meet the government's request for further investigation of America 2000 national goals three and five (U.S. Department of Labor, 1991). SCANS included 31 members from the nation's schools, businesses, unions, and government (U.S. Department of Labor, 1992b). The commission focused on determining the skills needed for successful employment, defining acceptable levels of
skill proficiency, suggesting ways to achieve this proficiency, and develop a dissemination strategy for schools, businesses, unions, and homes (U.S. Department of Labor, 1991). SCANS addressed its change by asking Commission members for ideas, visiting successful corporations, reviewing research, and having a panel of experts compile a list of skills from these sources that was then reviewed and further refined (Whetzel, 1992).

The Commission reported the findings of their study in What Work Requires of Schools (U.S. Department of Labor, 1991). SCANS determined workers need five competencies and three foundation skills. The competencies include resources, interpersonal, information, systems, and technology. Resource competency is the ability to identify, organize, plan, and allocate resources. Interpersonal competency is the ability to work with others. Information competency is the ability acquire and use information. Systems competency is the ability to understand complex inter-relationships. Technology competency is the ability to work with a variety of technologies. The commission also reported that the three foundation skills necessary for workers are basic skills, thinking skills, and personal qualities. Basic skills include reading, writing, mathematics, listening, and speaking. Thinking skills include creative thinking, decision making, problem solving, seeing things in the mind's eye, knowing how to learn, and reasoning. Personal qualities include responsibility, self-esteem sociability, self-management, and integrity.

Initial proposals of necessary proficiency levels for the five competencies and three foundation skills were outlined in Learning a Living: A Blueprint for High Performance (U.S. Department of Labor, 1992a). Before recommending proficiency levels, the commission interviewed approximately 200 people. Although, the sample was not a valid cross section of the American workforce, it did cover 50 jobs, 25 high
wage and 25 low wage. High wage jobs, such as programming technicians, were those paying between $374 and $654 a week. Low wage jobs, such as child care aides, paid between $203 and $373 a week. The interviews were designed to gather data regarding specific job tasks which the commission rated by difficulty. SCANS proposed a scale of proficiency based on the job ratings. The commission suggested that unskilled workers need to attain preparatory or low levels of skills. On the other hand, workers in jobs requiring expertise need to attain higher levels of proficiency. For example, on a difficulty scale of thinking skills from 1 to 5, low wage job earners averaging $298 weekly must attain proficiency of about level 2.1 in difficulty. High wage job earners averaging $513 weekly must obtain difficulty level of about 3.75. The commission anticipates further defining proficiency in a report yet to be released.

In later reports, SCANS will direct attention to two other tasks it was assigned. These are suggesting effective ways to assess proficiency and developing a dissemination strategy for schools, businesses, unions, and homes (U.S. Department of Labor, 1991).

Use of Thinking Skills in the Workplace

Although the basis of the SCANS work rests in the political arena and not research, workplace research exists that supports the commission concluding that U.S. citizens need thinking skills. The U.S. is losing ground as the dominant player in the global economy (Fitzgerald, 1986). Berlin & Sum (1988), Bishop (1988), Dronka (1988), and Fitzgerald (1986) examined the skill levels, including thinking skills, of workers in the nation and found the U.S. workers tend to be deficient. After two years of soliciting data from employers representing a valid cross section across the United States and comparing this information to economic indicators, such as unemployment and gross national product, Carnevale et al. (1988) concluded that the U.S. labor force
has serious problems due to the increasing spread between skills held by employees and those demanded by employers. Their conclusion was supported by Carnevale & Gainer (1989), Chisman (1989), and Lee (1988). Today's workers need a number of higher-order thinking skills (Carnevale, 1991; Johnston & Parker, 1987).

Zielinski (1989) asked representatives of business and higher education in Connecticut to what extent the goals of a liberal arts education should be provided by the corporate sector. Results indicate a strong desire to increase the critical thinking skill emphasis of the liberal arts education in the corporate sector. Additionally, no disagreement was found between the educators and the business representatives regarding this point.

Anderson & Steward (1989) indicate that no clear rationale explaining why today's workers lack higher-order skills exists. Their conclusion is based on results of a 108-item literacy test developed from direct observations of employees at a Pennsylvania manufacturing company and administered to approximately 20% of the 560 employees. However, Chisman (1989) explains the lack partly on inadequate techniques of measuring skill level. Despite the dilemmas of measurement, there is an agreement that workers lack essential knowledge and skills needed in a competitive workforce (Bottoms, 1989; Carnevale et al., 1988). Additionally, there is a strong correlation between skill level and an employer's ability to make the necessary changes to stay competitive in a global economy (Carnevale et al., 1988). Therefore, the U.S. economic position is directly affected when workers lack higher-order skills (Pucel et al., 1988).

As a further illustration, the South Carolina State Council on Vocational and Technical Education (1986) conducted a mail survey of more than 1200 South Carolina employers. The survey revealed that over 31% of respondents were not finding enough
applicants qualified to fill entry level positions. Over 60% of respondents hiring bank
 tellers, sales clerks, production workers, and customer service workers reported the
 employees typically required on-the-job training. The majority of respondents also
 reported they would prefer that schools place more emphasis on basic skills including
 thinking skills. In Tennessee, results of a mail survey randomly sent to a sample of
 employers who hired recent vocational graduates led to similar conclusions (Petty,
 McNelly, & Serle, 1989). There, 60% of respondents agreed that high school students
 lack the necessary skills to succeed in a globally competitive workplace.

 Through extensive case studies of four industry sectors, including apparel and
 textile manufacturing and financial and business services, including twelve banks and
 insurance companies, Bailey (1990, Spring) found that the jobs of the future will
 require better educated employees who are able to make the most of all their resources.
 Additionally, Bailey (1990, May) analyzed occupational trends and projections and
 reviewed relevant research related to the case studies to conclude that the growth in
 markets has led to an increased demand for customized products that meet requirements
 of individuals in differing regions. Further, increased thinking skills are needed to
 produce, service, and sell the variety of products manufacturers must now produce.

 Additionally, the Virginia Department of Education and State Council of Higher
 Education (1992, December) undertook a project entitled Study of Preparing a Skilled
 Workforce for the 21st Century which was focused on Virginia. The researchers were
 seeking to determine if the Virginia workforce will be prepared for the 21st century.
 Data for the study were obtained from the literature; representatives of large and small
 manufacturing businesses; and educators at the secondary, community college, and
 university level. Methods of collection included a mail survey and interviews with
 manufacturing business personnel. Additionally, two project events, Manufacturing
Workforce 2000 and Focus: Education for Manufacturing Workforce 2000, enabled educators and business representatives to discuss issues and develop recommendations for effective workforce preparation. All of the groups associated with the study agreed on the critical competencies needed by the 21st century entry-level workers and first-line supervisors. These critical competencies were categorized as follows: reasoning and problem solving, speaking and listening, teamwork, personal work habits, reading, writing, computation, and business principles. Entry-level workers needed the following competencies: devise new ways of handling recurring problems; work as a team member; participate in discussions; demonstrate a willingness to learn; gather information for a purpose; assimilate technical documents; mathematics; and understand the roles of money, investment, capital, cost, profit, product pricing, and productivity. First-line supervisors needed the following competencies: consider and evaluate alternative solutions; give clear instructions; demonstrate respect for others' opinions and differences; willingness to learn; assimilate technical documents; organize information; determine resources necessary for a task; and understand the roles of money, investment, capital, cost, profit, product pricing, and productivity. The conclusion of the study was that the workers of the 21st century will not be prepared.

The demographic profile of today's workforce has resulted in a declining number of young workers entering the labor force (Feldman, 1987; Lee, 1988; Strumpf, 1986). Further, the workforce has become composed of more women, minorities, and disadvantaged groups (Berlin & Sum, 1988; Carnevale et al., 1988; Pritz, 1988; Strumpf, 1986; Wade & Williams, 1988). In Chisman's (1989) opinion, this change and increased illiteracy rates have left employers unable to simply raise wages to attract more and better qualified workers. Participants, mostly employers, of a related forum anticipate the decline of young workers entering the labor force to
continue through 1995 (Berlin & Sum, 1988; Miguel, 1985). Therefore, an insufficient labor force will be available to meet the demands of business, and employers may have to accept less qualified workers to fill positions (Carnevale, et al., 1988; Strumpf, 1986). This is partially the result of today's workers being less successful in school than previous generations (Lee, 1988). The workers just do not possess the necessary skills including thinking skills to gain employment and hold a good job (Bottoms, 1989; Chisman, 1989).

Competition, rapid change due in part to technology, and consumer demand were predicted to lower the skill levels required by U.S. employees. However, the results have been just the opposite. Bailey (1990, May) illustrated that shifts in the consumer demand have caused employers to require greater levels of skill development, including thinking skills, from employees. For example, previously banks offered basic services, such as checking and saving accounts. Consumers were happy, and the bank employees did not need much skill to fill in the forms and process the paperwork when a new customer came in to the bank. However, today's consumers demand more from the bank, and the banks have tried to meet this demand with individual retirement accounts and other new services. The demand shift toward greater and more specialized products and services to meet individual needs has resulted in banks and other businesses requiring more skills at higher levels from employees.

Customer Service and Banking

Today's banking industry is characterized by mergers, acquisitions, downsizing, and decreased profitability (Lewis, 1992). After a thorough examination of the banking industry, Bennett (1992, January) and Lewis (1992) concluded that banks must hold a competitive advantage to achieve long-term growth and profitability. Further, the best method of attaining this competitive advantage is through superior customer
service. Bennett (1992, May) noted customer-oriented banks that attempt to satisfy customers in accordance with the bank's resources, objectives, and goals are not taking customer service far enough. Based on an examination of bank goals and profits, Bennett projected that in order for a bank to succeed in the 1990's it must become customer-driven, placing customer satisfaction as the top priority.

First Maryland Bank earned 93% more in the first quarter of 1992 compared to the prior year's first quarter. Bank executives interviewed attribute customer service as the reason behind this profit increase (Barthel, 1992). Miller (1992) notes that customer service leads to customer retention. Additionally, the increased retention enhances the bank's profits based on service quality survey research conducted by the Quality Focus Institute of the Bank Marketing Association.

Bankers are interested in improving customer service (Bellet, 1992). Bellet notes that Huntington National Bank has budgeted 10 to 15 million dollars through 1993 on new technologies that are expected to boost customer service in order to remain competitive. Fifth Third Bancorp has begun expanding its telephone banking services to improve customer service (Sullivan, 1992). Additionally, banks are utilizing technology to improve the delivery of banking services and gain customer satisfaction (Arend, 1992; Deutsch, 1992; Saunders, 1992).

Quality customer service is dependent on the bank employees commitment to the idea (Streeter, 1992). Employees need the freedom to bend company rules to offer the best customer service possible (Nadler, 1992). Braitman (1992) illustrated that 18% of United States banks currently offer customer service oriented training programs. However, 72% are planning to add this type of program to their training by the year 1995. Lunt (1992) reinforces the concept of customer service as the means for banks to remain profitable in the future. Further, Lunt places employee training at the
heart of customer service. A new banking position, quality service manager, has emerged to ensure customer needs are met (Colby, 1992).

Further Thinking Skills Emphasis

Inadequate skill preparation has implications beyond the workplace. For example, in a survey of disadvantaged youth with inadequate skills including thinking skills, 68% had been arrested, 79% were welfare dependent, 85% were school dropouts, 85% were unwed mothers, and 72% were unemployed (Carnevale & Johnston, 1989). Lower socioeconomic class workers receive less education which appears to force them into lower level jobs and traps them into a lower economic status (Berryman, 1988; Mote et al., 1986). Non-college bound students have also suffered from a lack of educational development (Carnevale & Gainer, 1989).

A call for more emphasis on thinking skills exists. Today's schools have been challenged to concentrate on providing students with the knowledge of how to think and not what to know. Bonstingl (1987) and Jackson and Hornbeck (1989) reported today's workers must possess the ability to think to survive in today's electrifying world of information processing, analysis, and application; simply knowing facts is not adequate. Vocational education teachers must teach work-oriented manipulative skills, decision making, and problem solving (Lynch, 1991). Technological advances, expansion of trade, and a growing number of entrepreneurial businesses that demand employees who can perform several tasks and expand with the business have placed further demands on the need for greater skill development according to predictions based on these trends (Vaughan, 1989). Today's basic skills include more than reading, writing, and arithmetic. Presseisen (1987) concludes higher-order skills must be included in the list of basic skills for all people to hold.
Learning materials and services that emphasize thinking skill development should be developed further (Rapalje, 1987). A comparison of results from the Florida College Level Academic Skills Test administered statewide to college sophomores revealed significant differences exist between those performing well and those performing poorly on the test. Students with high college entrance examination scores, high grade point averages, stronger high school curriculum, and those that had taken more and higher level college courses performed better on the test. Additionally, lower-scoring students tended to be minority students. Recommendations, included identifying at-risk students and offering them thinking skill development.

In a different study, Carrithers (1986) used questionnaires to determine what state commissioners of education and other key education officials believe will be the learning needs of 20th century high school students. Twenty-one individuals responded to the questionnaire. Their predictions included strong needs for critical thinking, reasoning, and higher-order thinking skills.

**Federal Legislation Supporting Thinking Skills Instruction**

The Carl D. Perkins Vocational and Applied Technology Education Act (1990) promotes thinking skill development of students with its requirement that academic and vocational education be integrated. Integration has two specific goals (Schmidt, Beeken, & Jennings 1992), and thinking skills are a part of those goals. The first is to provide occupational, academic, and higher order skills, including thinking, to all students, thus enabling them to function effectively in a(n) technically advanced society, information based economy, and globally competitive marketplace. The second goal of integration is to utilize the findings of cognitive psychologists to enhance students’ learning. This goal focuses on the students; academic and problem
solving skills are taught simultaneously; students are encouraged to recognize and solve problems; and hands-on learning reinforces academic skills.

Behavioral Event Interview

Based on experiences of previous researchers, the behavioral event interview procedure was selected for this study. This interview approach enables the researcher to interview a few subjects in depth and obtain great detail about the event or incident (McClelland, 1978). Additionally, McClelland noted the event descriptions provide thorough and detailed information that can be used to determine exactly what skills employees are using. This interview approach is better suited than the critical incident interview to determine what skills employees are using because the latter may not reveal adequately detailed events. Further, the behavioral event interview approach has been used to gather data in both industry and education.

Boyatzis (1982) examined 2000 managers, who held 41 different managerial jobs in 12 organizations using the behavioral event interview to determine which characteristics of managers are related to effective performance in a variety of management jobs in a variety of organizations. Results of Boyatzis' research are published in the book *The Competent Manager: A Model for Effective Performance*. Boyatzis considered the behavioral event approach to be a content-valid assessment of job skills because the interviewer obtains the interviewee's actual behavior on the job. However, Boyatzis noted that the approach is limited to only obtaining information that the interviewee is able to recall.

Schmidt, Finch, and Faulkner (1992) used the behavioral event interview approach to obtain data from 109 individuals representing ten school sites to identify the roles that are needed by teachers who integrate vocational and academic education.
Additionally, the researchers sought to document the contexts within which integration takes place and the key players involved in the process.

Summary

A review of relevant literature was presented in this chapter. The review showed that thinking skills are based in cognitive and metacognitive psychological theories. Two basic models of cognition that are in use in Baltimore City public schools were presented and described. Data obtained from this study can be used to enhance these models.

This study examines creative thinking, decision making, and problem solving. Definitions of these skills were provided in this chapter. Additionally, the general, infusion, and immersion approaches to teaching thinking skills were examined. Outcomes of this study provide a basis for teaching thinking skills through the infusion approach, the most commonly used of the approaches.

Further, the six national education goals depicted in America 2000: An Education Strategy were highlighted. Goals three and five led to the work and reports of SCANS. The commission reported that today's workers need proficiency in five competencies, including resources, interpersonal, information, systems, and technology. Additionally, the report included a recommendation that workers also gain competency in three foundations, including basic skills, thinking skills, and personal qualities. Thus, the focus on thinking skills in this study.

This chapter presented outcomes of studies supporting the need for thinking skills in the workplace. Reports were highlighted that indicate today's workers lack necessary skills, including thinking skills. Further, evidence was provided that suggests employers are demanding that workers acquire high levels of thinking skills than in the past.
The need for banks to emphasize customer service in order to grow and survive in the future was presented within this chapter. It was shown that several banks have experienced exceptional earnings, and their executives attributed the earnings to customer service. Further, bankers have begun implementing training programs to improve the level of customer service. This study examined instances of the use of thinking skills in customer service. These instances can serve as a basis for the development of future training programs.

Additional support for thinking skill development was also presented. Inadequate skill development has been linked to a host of social problems, including increased crime and welfare dependence. Thinking skills were shown to have influenced the Perkins Act requirements and to play a major role in educational reform required by the act.
Chapter 3

METHODOLOGY

This chapter presents the research methodology employed in this study. The design of the study, interviewee selection, instrumentation, data collection, and data analysis are discussed.

The purpose of this study was to identify instances when workers in a business environment used thinking skills in a manner that was beneficial and to examine how they perceived they acquired thinking skills. The events were ones that occurred as part of customer service duties and resulted in beneficial outcomes. The following research questions were addressed:

1. What perceived thinking skills were used in customer service events that bank employees perceived as beneficial?
2. How do bank employees perceive they acquired thinking skills?

Design of the Study

A qualitative design was selected to collect the data for this study. Bogdan and Taylor (1975) define qualitative methodologies as research procedures that produce descriptive data. Further, descriptive data are people's own spoken words, written words, or observable behavior. A qualitative design of data collection was appropriate because of the descriptive nature of the data and the reliance on personal interviews as the data source.

Personal interviews were selected to gather the data because of the advantages cited by Miller (1970). One advantage is that the information obtained is more likely to be correct than that obtained by other methods. This holds true because the interviewer is present to clarify any misunderstandings should they arise. Additionally, the personal interview allows the interviewer to collect information regarding the
interviewee's personal characteristics and environment that could be valuable when interpreting the data. Disadvantages of the personal interview, according to Miller, could also be handled. These included transportation costs, proper training of the interviewer, and time involved in conducting and transcribing the interviews.

The behavioral event interview approach was selected because its focus, as identified by McClelland (1978), is on what is required to do a given job well. Further, the purpose of the behavioral event interview is to identify the necessary competencies of various jobs. The review of the literature revealed that the behavioral event interview approach had been used in both industrial and educational research (Boyatzis, 1982; Schmidt, Finch, & Faulkner, 1992). Additionally, the review of the literature revealed that thinking skills are a necessary competency of today's workplace. The behavioral event interview was, therefore, suited to obtain details of events that involved bank employees' use of thinking skills when performing customer service related duties. The behavioral event approach was selected over the critical incident approach first popularized by Flanagan in 1954 (McClelland, 1978), whereby subjects write out detailed descriptions of how they go about their job. These critical incident descriptions may not be detailed enough to determine what the employee was actually doing or thinking. The behavioral event provides the opportunity to interview a few subjects in depth and obtain all relevant information making it more appropriate than the critical incident approach (McClelland, 1978).

Interviewee Selection

The purposive sample for this study was selected from full-time employees of banks operating in Virginia in the spring of 1993. The Federal Reserve Office of Richmond was able to furnish a listing of banks operating in Virginia on June 30, 1992. However, due to bank mergers and acquisitions this list became out of date
rather quickly. The list of banks was, however, accepted to be inclusive of Virginia banks for purposes of this study. At the time of data collection some banks on the June 30, 1992 list were no longer in existence and other banks had come into existence.

The purposive sample included employees from three banks that play a major role in banking in Virginia. The three banks were selected from the listing obtained from the Federal Reserve. Large asset size was a factor in their selection. Additionally, administrators of the selected banks agreed to cooperate in the study and were receptive to having their employees participate. Three branches of each of the three banks were identified for the study by a spokesperson of the bank through telephone contact. Additionally, the individual branch managers were contacted by telephone and asked to select the other two employees at their branch for the interviews. Interview times were established during this conversation with the branch manager. The only stipulations placed on the manager for selecting employees to participate in the study were that they be full-time and represent three distinct employee levels: branch manager, new account representative, and teller. This procedure led to 27 bank employees participating in the study.

Instrumentation

The interview instrument was developed and field tested with the help of banking employees not part of the study. Additionally, the interviewer worked closely and obtained training in the behavioral event interview process from the research professor. The procedure for developing the instrument was as follows. First, an initial draft of the instrument was prepared and administered to volunteers without regard to profession. This provided the researcher with a feel for the potential responses and alerted the researcher to any potential misunderstandings. Feedback from these preliminary interviews was considered and aided in the instrument
development. After the instrument was developed as much as this process would allow, it was reviewed by the major advisor and research professor before being administered to banking employees. Prior to the interview, bank employees were furnished a brief description of the type of information that the interview was designed to obtain and were informed that they would be asked to provide two events when they believed they successfully used thinking skills in customer service work. Three employees were interviewed. Time elapsed between each interview to allow the researcher to work through a trial run of the data analysis with the research professor and make any necessary adjustments between these interviews conducted at the field test stage.

This developmental process included having each tape recorded interview transcribed. The transcribed data is referred to as the interview write-up. Segments of the write-up that pertained to a particular thinking skill category were then coded. The coding process involved marking the text using The Ethnograph computer software program. The marking or coding of text with The Ethnograph enables the researcher to later retrieve those segments coded with the same category. For example, all segments coded creative thinking could be retrieved by computer, eliminating the need for cutting and sorting text by hand. The coded data were reviewed by the research advisor of the study. Necessary refinements of the instrument were then made. This process was repeated as needed to finalize the interview procedures. A copy of the instrument appears in Appendix A.

The instrument was designed to explore events that involved the use of creative thinking, decision making, or problem solving by bank employees performing customer service related duties. Further, the interviewees believed the events were representations of successful thinking skill implementation. At the beginning of each
interview, a written definition that combined the three thinking skills was handed to the interviewee to reinforce information the interviewee had already received. Then, the same information was read to the interviewee and any uncertainties the interviewee had about the skills clarified prior to asking for details of the specific events. The definition that combined the thinking skills was developed during the field test stage. The field test showed that interviewees became confused by the separate definitions for each thinking skill. Therefore, the combined definition was tested and proved beneficial.

The questions and probes used in the interview process were developed during the field test stage. The questions were designed to obtain the data necessary to answer the research questions of this study. During the field test, these were refined after reviewing responses and discussing them with the committee chair and research professor on the committee. Further, the probes used in the interview were also developed in this manner. The probes were designed to obtain as complete information as possible regarding the events described by the banking employees.

Accuracy of the Transcriptions

The transcribed tapes for each of the field test interviews were reviewed for accuracy. Additionally, randomly selected tapes of the data for the study were reviewed by a panel to determine the accuracy of the transcription to the tape of the interview itself. The reviewers' verification of accuracy are in Appendix B.

Data Collection

Data were collected through behavioral event interviews with the bank employees. The time of the interviews was established by telephone to ensure mutual convenience for the bank employees and the interviewer. Prior to the interviews, the employees were sent a letter detailing that the interviews would be tape recorded and
then transcribed to ensure that the information was maintained in their own words. The letter also provided a brief description of the thinking skills to be discussed in the interview and informed the interviewees that they would be asked to provide two events where they believed they had successfully used thinking skills in customer service work. This letter appears in Appendix C. This procedure was developed in the field test stage.

Data Analysis

The two research questions and a description of the data analysis to meet them follow.

**Question 1:** What perceived thinking skills were used in customer service events that bank employees believed to be beneficial?

After each interview was conducted, the tape recorded data were transcribed into a write-up. The purpose of the write-up was to present the event in an understandable and organized format. The write-up was written in the first person exactly as told by the interviewee and hence, read like a story. The write-ups were helpful in the analysis and coding of the data. At the field test stage, the procedure for preparing the write-ups was established.

To accommodate the large amounts of text generated by the interviews, *The Ethnograph* computer software program was utilized. The software enabled the researcher to code and recode segments of text from the events according to thinking skills used. Additionally, the program allowed the researcher to group and regroup the text according to particular categories of thinking skills used by employee levels.

The researcher examined the following three thinking skills: creative thinking, decision making, and problem solving. The researcher recognized that the nature of thinking and the definitions of the skills could result in overlapping when the text of the
events was analyzed. To accommodate this, the seven possible combinations of the skills were given individual identifiers. These were used to facilitate coding the segments of text obtained in the interview and processed with The Ethnograph software program. The individual identifiers were as follows:

- **C** - Creative thinking (practically defined as generating novel or new ideas)
- **D** - Decision making (practically defined as evaluating and choosing the best alternative)
- **P** - Problem solving (practically defined as recognizing problems and developing and implementing solutions)
- **CD** - Creative thinking with decision making
- **CP** - Creative thinking with problem solving
- **DP** - Decision making with problem solving
- **CDP** - Creative thinking with decision making with problem solving

The above identifiers were used to code or mark various segments of text within the interview transcriptions. After the coding was complete, the coded segments of text were retrieved and arranged by thinking skill category. Additionally, within each thinking skill category the segments were arranged by employee level. Each employee level within each thinking skill category was then reviewed as a set. As these sets of text were reviewed, common elements or themes began to emerge and were identified. These themes were reported in the findings.

Further, the segments were reviewed by thinking skill category without regard to employee level. Again, common elements or themes emerged. These were reported in the findings.
Question 2: How do bank employees perceive they acquired thinking skills?

The data to answer this question were obtained from the transcribed tapes of the interviews. The information was prepared in an interview write-up. The purpose of the write-ups was to present the information provided by the interviewees in an understandable and organized format. The write-ups were written in the first person exactly as told by the interviewee with attention given to fully detailing when and where the skills were acquired. The write-ups were helpful in the analysis and coding of the data.

The Ethnograph computer software program was utilized to facilitate the analysis of these data, as well. The software enabled the researcher to code and recode segments of text according to how and where the thinking skills were acquired.

Once coded, the segments of text were retrieved and arranged according to employee level. Further, the coded segments were grouped according to how thinking skills were acquired, such as by experience. The results of this question were presented in the findings.

Summary

The methodology of the study was presented in this chapter and the design of the study was described. Further, a rationale for the utilization of the behavioral event interview technique for gathering the data was presented. The interviewee selection process was defined. Additionally, each research question was addressed and the method of analysis was provided for each.
Chapter 4

RESULTS OF THE STUDY

The behavioral event interview approach was used in conducting this study to generate events when workers in a business environment, specifically banking customer service operations, used thinking skills in a manner that was beneficial. Further, how the thinking skills were acquired was examined. The purposive sample for the study included 27 employees from nine bank branches. Three branches were from each of three banks operating in Virginia. At each of nine bank branches, the branch manager, new account representative, and teller were interviewed. This resulted in nine branch managers, nine new account representatives, and nine tellers being interviewed. Use of this process yielded a data base that adequately represented the banking environment studied. The data base was determined to be adequate since a consistency among the responses given by the interviewees developed.

This chapter includes descriptive information for the banks represented and for the interviewees. Additionally, responses and results for the two research questions are presented.

Bank Descriptive Information

The selected banks operated in Virginia on June 30, 1992 according to information obtained from the Federal Reserve. Further, the banks still conducted operations within Virginia in the spring of 1993 when the interviews were conducted. To maintain confidentiality these banks will be referred to as bank 1, bank 2, and bank 3. Additionally, each bank included branch 1, branch 2, and branch 3.

The following list provides data representing the bank and branch sizes according to information provided by branch managers during the interviews. Numbers are rounded to the nearest whole number.
Bank 1, assets $64 billion
   Branch 1, deposits $164 million
   Branch 2, deposits $10 million
   Branch 3, deposits $49 million
Bank 2, assets $117 billion
   Branch 1, deposits $38 million
   Branch 2, deposits $25 million
   Branch 3, deposits $30 million
Bank 3, assets $11 billion
   Branch 1, deposits $34 million
   Branch 2, deposits $48 million
   Branch 3, deposits $22 million

Interviewee Descriptive Information

The interviewees were experienced banking employees. The branch managers had been in banking for a mean of 15 years, ranging from 5 to 26. The new account representatives had been in banking for a mean of 12 years, ranging from 4 to 25. The tellers had been in banking for a mean of 12 years, ranging from 4 to 22.

Additionally, branch managers noted many different positions they had held during their banking careers. The employee with the most direct route to manager began as manager trainee and moved to manager within three years. The most complex route involved an employee who began as teller, and 19 years later became manager. The new account representatives followed similar routes to their position. Seven began as tellers, and two began as secretaries. The tellers also followed a somewhat similar procedure to their position. Six began as tellers, and three began as secretaries.
All of the interviewees had completed high school. However, only seven had completed postsecondary degree programs. All seven of these were branch managers. Two of them had earned associate degrees. The other five earned bachelor's degrees. Additionally, each of the interviewees reported that they had taken courses from the American Institute of Banking.

The interviewees rated the importance of thinking skills to customer service relatively high. On a scale from 1 to 5, with 5 being the most important, branch managers provided a mean response of 4.89. New account representatives rated the importance of thinking skills to customer service at a mean of 4.83. The mean for the tellers was also 4.83.

When asked to rate how important customer service is to the interviewee's total job on a scale from 1 to 5, with 5 being the most important, responses were, again, relatively high. The mean of the branch managers response was 4.72. The new account representatives stated 5.0, the highest possible rating. Tellers provided a mean response of 4.94.

Interviewees reported they spend much of their customer service time using thinking skills. Branch managers spend a mean of 71% (One of the nine managers was unable to determine this.) of customer service time using thinking skills. New account representatives reported that 81% of their customer service time involves the use of thinking skills. Of the three employee levels, tellers reported spending the greatest portion of customer service time using thinking skills. Their mean response was 91%.

Branch managers reported spending the least amount of work time on customer service. Their mean response was 73% (One of the nine managers was unable to determine this.) of work time was directed toward customer service. New account
representatives and tellers reported that 81% and 90%, respectively, of work time was spent on customer service duties.

Responses to Research Questions

Research Question 1: What perceived thinking skills were used in customer service events that bank employees believed to be beneficial?

A total of 55 events were obtained through interviewing 27 individuals. These provided a base with consistency among the interviewees' responses that adequately depicted the banking environment. Eighteen of the events were from branch managers. Of the nine branch managers, seven provided two events, one provided three, and one provided one. Due to taping difficulties, one manager's second event was lost. Nineteen of the 55 events were from the nine new account representatives. Eight of the new account representatives provided two events and one provided three events. Eighteen of the 55 events were from the nine tellers. Each of the nine tellers interviewed provided two events.

The process followed to answer this research question was determined in the field test stage while working the research professor of the dissertation committee. The researcher reviewed the definitions of the thinking skills examined in this study prior to reading the text from the interviews. The text was reviewed with the definitions in mind and segments of the text that appeared to contain the use of any of the thinking skills were marked.

The Ethnograph computer software was beneficial in this phase. The Ethnograph program provides a printed copy of text with the lines numbered consecutively. Additionally, the printed copy contains wide margins for notes. In these margins the researcher noted which thinking skills were perceived to be used by the interviewees. After the text was marked, the references to thinking skills were
imbedded within the document according to the coding scheme with the use of The Ethnograph. The computer program was then used to print another copy of the text. This copy contained the embedded codes of the thinking skills. Each of the interview transcripts was then reviewed and the coded thinking skills were corrected where necessary to match the thinking skill definitions. Further, the program enabled the researcher to retrieve the coded segments of text according to descriptors, such as thinking skill code or employee position. These segments of text are referred to as an instance that involved the use of thinking skills.

This process yielded 62 segments of text that illustrated the perceived use of thinking skills. Each event was reviewed to determine if one of the thinking skills was represented in it. No attempt was made to force an illustration of a thinking skill if one was not present. However, each of the 55 events relayed by the interviewees did contain at least one thinking skill. Some of the events contained more. The instances of thinking skills were then retrieved and reviewed by category and are presented on the following pages. Additionally, the segments of text for each thinking skill category were reviewed as a group and commonalities that existed are presented as themes for that thinking skill.

Creative Thinking

In the events related by the interviewees, nine segments of text or instances were classified or categorized as creative thinking. The classifying process was developed in the field test stage of the study. Throughout the creative thinking instances, a central theme of helping the customer and creating business by generating new ideas existed.
Five of the instances of creative thinking were in the events described by the branch managers. Recurring in these instances was the theme of generating business for the bank.

One branch manager described calling upon a former customer. Another bank had called for a credit check on this person. The branch manager stated:

I happened to call the individual at his job. He knew who I was, and I said "I was just calling some of my good customers." I didn't let on that I knew he was shopping for a loan. I told him I was calling my good customers to see if there was anything new I could do.

The manager continued:

I would say that this has probably been one of my most successful sales since I've been with the bank over the last 14 years, also for utilizing thinking skills in looking at other opportunities, thinking about what other opportunities were there with this customer I think led to me becoming successful in that. And it helped me achieve my sales goals.

Another manager stated:

I devise new ways to contact customers. One way is through the Chamber of Commerce. Another is to get referrals from realtors, like I did not long ago. I got the name of a couple that is moving to town, and I called them. They have since opened both checking and savings accounts. I feel they will also use us for their mortgage.

Only one instance of creative thinking was reported by new account representatives. It had to do with the generation of a new investment alternative to suggest to a customer. The employee described an event when the customer knew what type of investment suited the customer's needs. The new account representative used creative thinking to recognize that the customer would be better off with another investment and convincing the customer of that.

The new account representative stated:

In the nature of this job we have to do a lot of probing in trying to find out what type of funds you are talking about amount wise and what your goals are because we don't want to put you in something that is wrong for you. I remember one young man with an inheritance. He came in just knowing he wanted a CD period. I had to use a lot of thinking skills
to get him past just a CD and to teach him a little bit about mutual funds. He was not planning to spend this money, it was purely investment money and so there were better ways for him to invest it than just CDs. The man went CDs the first year and then turned around and went mutual funds the following year.

The new account representative attributed the man's decision to switch investments to mailings of information regarding mutual funds the employee had sent the customer during the year. Also, the new account representative believed the customer spoke to other people, including relatives that were in investments other than CDs. Further, the new account representative noted:

I think he is glad that he did because CD rates have continued to decline whereas he was able to pick up a good rate, I forget what it was, but we locked in at a pretty good rate.

Three of the instances of creative thinking were in the events described by the tellers. Each of the three had a theme of trying to help the customer and provide the best possible service.

One teller described suggesting that an elderly woman be placed on a new account that her son was opening. The teller did this so that the elderly woman could avoid paying a three dollar fee for cashing her social security check since she was not a customer of the bank. The teller stated:

This woman has been coming in for years with her social security check so I was familiar with her. I advised her to eliminate having to pay that three dollars every first of the month when she comes in to get her social security check cashed by putting her name on the account too. So they opened up a joint account which eliminates her paying three dollars every month.

Another teller reported that a customer came into the bank to deposit $40,000 into a checking account that did not earn interest. The teller described telling the customer:

You don't want to put $40,000 into a checking account because there are better things to do with your money.
It turned out that the customer was aware of the other investment alternatives, such as a certificate of deposit, that the teller suggested to the customer as a way of investing the money. The teller stated:

The money was only going to sit there in the checking account for a few days or a few weeks. She knew she was going to do something else with it.

Another teller described an activity that was not part of the tellers job description. This teller developed the novel idea and telephoned elderly customers if they have not been in the bank recently to determine if they developed a problem that prevented their coming to the bank. The teller stated:

One little lady is real sweet. I just called her and asked if she was OK. She said she was and thanked me for calling.

Further, the teller noted:

The customers are always pleased that I care, but sometimes they let me know they have been in the bank when I was on break or off. It is nice to know that the customers care too. I guess that’s because I’ve been at this branch so long.

**Decision Making**

In the events related by the interviewees, 13 instances were classified as decision making. Throughout the decision making instances, two central themes emerged. One was determining when or which services to perform for a customer. The other was determining when to charge or refund a fee to a customer for a service, such as an overdraft.

Four of the instances of decision making were in the events described by the branch managers. The instances involved the manager's decision to perform a service for a customer.
One branch manager stated:

We try to do everything within our power to cash every check that we possibly can cash. When in doubt about the quality of the check, we just keep trying and when all else has failed, we decline to cash the check.

The manager continued to describe a specific time when a customer who appeared to be 22 years old was trying to cash a check using an identification indicating she was 39. Further, the customer was becoming belligerent with the teller for questioning the identification. The manager stated:

I went over, and I thought we want to be sure and not jump to conclusions. I asked the individual to send in a second piece of identification. Well, maybe we were wrong on this, but the customer continued to prove to us that there was no way that this was the same person. We felt fairly confident that we had a situation of a fraudulent nature. I refused to cash the check. The lady got out of her car, stomped her feet, cursed at us, and really started to get abusive when she realized I was not going to be able to help her. At that point, I cut the loud speaker off so that my entire lobby was not exposed to her and all this non-essential language. So sometimes our decision making does lead to some hard feelings but generally not incidents like that.

Another manager described the reason behind deciding to make an unprofitable loan. The manager noted:

I was trying to retain a relationship. It was more of an accommodation. The customer has other business with the bank that is profitable. Although, this particular loan is a loss, the customer is profitable to us, overall.

Six of the decision making instances were in the events described by the new account representatives. Recurring in the instances was the theme of deciding whether to perform a service or deciding which service to offer a customer.

One new account representative stated:

I had to think yesterday when one of the tellers brought a check over here to me for like $3,000. I had to decide whether I was going to approve cashing that check for the people or decline it. I declined it. It was an insurance check, we do not cash them, we take them for deposit only, so I had to think.
Another new account representative described a customer who was beginning to save for retirement. The employee noted:

I immediately suggested the 16 month IRA that's paying 4.25% which is more than our two year rate. To me this is a good happy medium. The customer can then wait and see what the market is going to do. I feel the customer was happy with this.

Another new account representative noted:

We have to use our thinking skills to determine what is best for the customer.

Three of the instances of decision making were in the events described by the tellers. Each of these focused on refunding money to a customer. Also, noted was a teller determining whether to conduct a service.

When referring to a situation when a customer lost interest on a deposit because a bank employee placed the customer's deposit into the wrong account. The teller stated:

I had seen how much he had lost and went back and said I am going to give the interest he lost to him, even though he did not ask for it. You know, to bring it right to where he was since it was our error.

Another teller described an incident when a customer's account was debited twice, in error, by a company for goods the customer had purchased. As a result, the customer's account became negative. The customer was then charged an overdraft fee. The teller noted:

We refunded that fee because I could see that it was a mistake that he had nothing to do with.

Another teller described a situation different from the other two tellers. This teller described why a decision was made not to cash a check for a customer. The teller stated:

For some reason, I just didn't feel comfortable with the situation. It was a two-party check. I'm not sure why I was suspicious. Maybe she (the customer) just seemed a little nervous.
Problem Solving

In the events related by the interviewees, 22 instances were classified as problem solving. Throughout the problem solving instances, two themes emerged. One was researching known problems with customer's accounts. The other was implementing the best solution to meet the customer's needs.

Three of the problem solving instances were in the events described by the branch managers. Central to these events was the theme of implementing the best solution to meet a customer's needs.

One manager recalled a customer whose father had died and left the customer a number of Series EE bonds dating back to 1955. The manager was handling this situation by gathering information from the Treasury Department. The manager noted:

I think within a week we will know the best way to handle this. We've talked to other people, and their opinions on it will make it much simpler. The problem that you face is that the interest has accumulated since 1955 and will be taxable when the bonds are redeemed. I'm trying to spread that taxable part around and save the customer some money.

Another manager was involved with a customer who had an unsecured line of credit up for renewal. The manager had the task of convincing the customer to change to an equity line so that the loan would be secured. The manager stated:

I convinced him because of the tax advantages. Although the equity line had a higher interest rate than his unsecured loan, his actual cost would be lower because of the fact that home interest is tax deductible. I showed him this, and he went with the equity line. I think he was really pleased with the new loan.

Seven of the instances of problem solving were in the events described by the new account representatives. Two themes recurred in these. One was researching customer's accounts. The other theme was implementing the best solution for a customer.
One new account representative was faced with finding a customer's account number. The customer had left a deposit with one of the tellers, but the teller did not have the account number because the account was new and the number was not on the deposit slip or in the computer by the customer's name. The account had been opened at another branch and was not put on the system. The employee stated:

I spent three hours tracking that down. I didn't think I would ever do it, but I found a customer with the same last name and called that branch. They had opened the account and were able to locate the account number.

Another new account representative was working with a customer who had been charged a $13 fee for servicing a checking account. The customer was angry because the fee varied depending upon the number of checks written and would occasionally cause him to overdraw his account since he was unable to determine the fee. The new account representative stated:

I changed his account to a regular checking account so he'd only get charged $7, and he could write all the checks he wanted. See, that's simple, but it is to his benefit. He still has to pay $7 for a monthly fee, but he was paying thirteen. He was not in a good mood when he called, but he appreciated only having to pay a set $7 in the future.

Twelve of the problem solving instances were in the events described by the tellers. Central to these was the theme of researching accounts to solve disputes or provide further information to customers.

One teller recalled a situation when a customer came to the bank upset because a deposit she thought she made into her son's account was not there. The teller stated:

As we looked up the son's account on the computer to research the problem, we realized the father and son have the same name. At that point, I checked the father's account and found the money had been deposited in the father's account. It seems so easy now. The lady told me that when she made the deposit she was only able to tell the teller her son's name. She did not know his account number or have a deposit slip. Apparently, the teller who took the original deposit did not realize the names were the same and placed the money in the wrong account.
Another teller had a customer whose account was overdrawn. The customer was angry because he believed the bank had taken money from his account twice for the same check. The teller stated:

It turned out that a fraudulent business was able to get the customer's account information over the phone through a sales pitch. The customer was then billed for the item, and he sent a check to the business. Additionally, the business wired the money out of his account resulting in two deductions. In this type of situation, you have to keep prompting the customer and get the customer to keep talking before you have enough information to figure out what happened.

Another teller stated:

I had a customer who was transferred to me on the phone. She was upset because she had been transferred several times and no one could tell her who bought a bond that was given to her daughter. It took a couple of days to find out, but I knew the right people in the bank to call and get the information she wanted.

**Creative Thinking and Decision Making**

In the events related by the interviewees, two instances were classified as combining creative thinking and decision making. Both of the instances were reported by a new account representative. Both focused on generating ideas or services to offer a customer and suggesting them to the customer.

In one of the instances a new account representative stated:

I had a lady come in two days ago to open a checking account and through the process found out other needs that she had. For instance, she was getting ready to refinance her home. So, therefore, I had to stop and think. I wondered how I could help this customer, and I referred her to our mortgage company. I felt that took some thinking on my part. You try to uncover other needs which cause you to think about the situation. In this case, I uncovered several needs.

**Creative Thinking and Problem Solving**

In the events related by the interviewees, seven instances were classified as combining creative thinking and problem solving. Throughout the creative thinking
and problem solving process, a central theme of generating novel approaches to solving customer's problems and retaining business existed.

Two of the instances of creative thinking and problem solving were in the events described by the branch managers. Both centered on a novel approach to solving a customer's problem.

One branch manager recalled a customer who had moved away, closed a checking account, and was going to transfer an IRA account to another bank. The customer was upset about a federal regulation that the customer believed was the bank's policy. Additionally, the customer was afraid that proceeds from the IRA would be lost in the mail when sent to the new address. The manager noted:

I convinced him that by reopening his checking account and having the IRA distribution made directly into it he would be better off. I explained that he would have to follow the federal guidelines at the other bank. Also, he would not have to wait for his check and the money would not get lost in the mail. We opened his checking account, and I felt good about the contact. Also, he was benefitting because our IRA rate was higher than the other bank's rate.

Another manager remembered a customer who wanted to purchase a new home but did not have the required downpayment. The manager stated:

I came up with a way to do a second mortgage for the downpayment. The customer obtained a first mortgage from our mortgage company, then borrowed the rest of the purchase price as a second mortgage. This way the customer got his house and 100% financing with no money down.

Two of the instances of creative thinking combined with problem solving were in the events described by the new account representatives. One of these centered on developing new business for the bank. The other saved a loss for the bank.

A new account representative stated:

I really had to use my thinking skills in the recent past when a customer that normally goes to a different branch came in with a certificate of deposit that she wanted to redeem before maturity. Through looking up some information on the computer, I was able to see that this certificate
happened to be in her name and one other person's name. The second person on the account had a checking account closed in unfavorable circumstances to the tune of a $164 loss to the bank. So by having done that research and with some quick thinking, I was able to recover the $164 loss out of this CD that she was cashing. She was not happy at all that I picked up on this. It took some quick thinking to make that recovery and it also took quite a few skills and quick thinking to keep the customer from totally going off because she was going out the door with $164 less than she thought.

Three of the instances of creative thinking combined with problem solving were in the events described by the tellers. Each of them centered on the teller generating ideas to solve a customer's problem.

One teller recalled an elderly customer who called on the telephone. The customer was unable to come to the bank and was interested in opening an account. The teller stated:

I think we had a positive outcome. It was obvious she was a very elderly lady and could not get out to come and see us. So, I spoke with the customer service representative and arranged a time when both of us could go to this woman's house. While at the house, we opened the accounts for her. It generated quite a lot of new money for the bank.

Another teller stated that a person had come into the bank to cash a check that was drawn on another bank. The person wanted to open an account but needed to have funds from the check available immediately. This was not the bank's policy. Normally, a hold is placed on the funds when an account is opened with a check. The teller told the customer:

Go to the bank that the check is drawn on, which is only a block away, and cash the check. Come back and open an account with the cash. The funds will be available immediately because there is no hold on cash deposits.

The woman followed the teller's suggestion, the problem was solved, and an account opened without a hold on the use of the funds.
Decision Making and Problem Solving

Six instances were classified as combining decision making and problem solving in the events related by the interviewees. Central to them was the theme of selecting the best alternative to solve a customer's problem.

In the events described by the branch managers, two instances of decision making combined with problem solving were classified. Both of these centered on the theme of evaluating and choosing the best alternative to a customer's problem.

One manager remembered calling a customer before deciding not to charge the customer for an overdraft and return the check for nonsufficient funds. The employee stated:

I’ve seen more and more of this at the bank. We are actually looking at the accounts and calling customers before making human decisions as to whether we are going to honor the check. We are trying to give just a little bit better customer service. I know of a customer who really appreciated it because the check probably would have been returned had I not looked at it. He would have been charged a fee and those situations are very embarrassing. It was embarrassing enough to have a phone call that your account is overdrawn, but he was glad I called him.

Another branch manager stated:

A customer who lives out of state did not pay any attention to a notification that his CD was maturing. Upon maturing, it was automatically renewed. When the customer realized that the CD had been renewed and at a rate that was below other banks, he was upset and called me. I decided to redeem the CD at the standard penalty for early withdrawal and renew it at a higher rate. He was able to recoup his loss plus made money. I think it was beneficial to him because he is making more money. I retained the CD and all was satisfactory.

Three of the instances of decision making and problem solving were in the events described by the new account representatives. One instance involved the new account representative struggling for days over what type of investment to suggest to a customer. The other two involved a decision to transfer money to an upset customer.
A new account representative stated:

A customer with three accounts had made a deposit into the wrong account. She had made the error and put the money into a non-interest instead of an interest bearing account. She wanted her interest for the 45 days that the money was in the wrong account. I had to make a decision about whether to pay her interest for 45 days or let her go ahead with the threat of closing the accounts. I made the adjustments for her. This is not a normal bank policy.

One instance of decision making and problem solving was in an event described by a teller. The event involved a customer that could not get to the bank but asked if someone could come out to her house. The teller stated:

We normally don't do that, but I decided to go since she was sickly and not able to get out. I told her I would take care of it and asked if I could bring a financial specialist with me. She agreed.

The teller noted that the situation resulted in a big sale and the customer was able to save taxes because of the investments that the financial specialist suggested.

**Creative Thinking, Decision Making, and Problem Solving**

Three instances were classified as combining creative thinking, decision making, and problem solving. Each of these was in the events related by the branch managers. Neither the new account representatives nor tellers related instances that were classified into this category. The theme of the instances was developing new approaches to a customer's problem, determining the best alternative, and implementing that choice.

One branch manager stated:

An angry customer came in, and he was real hot. He was hot because he had been a customer of the bank for at least 10 or 12 years and was denied a loan. He wanted a "crummy" car loan, as he put it, and we turned him down. In this particular instance, the loan officer basically looked at the application and said you're declined, this is your debt to income ratio, you don't qualify. The officer did not take a generalized look at the customer's whole picture to see if there was another way to do it.
The branch manager took a second look at the customer's application. The manager found:

He had a lot of equity in his home. Although he did have a lot of debt outstanding, we offered the individual a second mortgage or equity loan that picked up all of his outstanding debt plus money for his car. We ended up going five years on the note which was all he wanted to go on his car loan. However, we could give him a very good rate on that. By consolidating his higher interest debt, he qualified for a loan. Plus, he now had tax advantages from the mortgage that he would not have had from the car loan.

Additionally, the manager went further to describe:

Since second mortgages take a while to book and he wanted to get his car right away, we got tentative approval on the mortgage and set him up on a short-term 30 day note so he could have the money to get the car. When the mortgage closed, we just paid out the 30 day note.

The manager also noted:

It was not overly creative, but basically, he had come in for a car loan and got declined. We were able to take the decline and make a loan by shifting gears and going another avenue, instead of declining his loan application we made a secured mortgage.

In a separate instance, a branch manager described a customer who was going to get a 10 year mortgage from another bank because the rate was better. The manager stated:

Although we could not compete on the 10 year rate, we had a very good five year rate. However, the customer could not afford the higher payments of a five year note. Since, the bank did not have any guidelines for pricing loans in between five and 10 years, I offered a seven year loan to the customer at a rate that was in between our five and 10 year loans. We were able to book the loan.

**Research Question 2: How do bank employees perceive they acquired thinking skills?**

Twenty-six interviewees responded to this question. Five of the interviewees did not know how they acquired thinking skills. Eighteen believed they acquired thinking skills through experience. One of the interviewees described a thought puzzle
that led to thinking skill development. None of the respondents indicated having taken a course designed to emphasize thinking skill development. However, two of the interviewees suggested they acquired thinking skills through educational experiences.

**Branch Managers**

Nine branch managers responded to this question. Six believed they acquired thinking skills through experience, and two reported educational experiences contributed to their thinking skill development.

One of the branch managers who reported having acquired thinking skills through experience stated:

A lot of it comes from talking to other people, seeing what they do, how they approach things, and so forth.

Another stated:

I think you acquire them a little bit by age, experience for sure.

Another noted:

I think it is probably something that's been developed through the years working with people and working with the public.

One of the branch managers who suggested educational experiences contributed to thinking skill development noted:

In watching a two and a half year old you almost think it's something you are born with; but, then, it is an acquired skill because you have to present problems to the two and a half year old and then sit back and watch how good the child solves that problem. It can go all the way back to a Fisher Price toy that has four different shapes cut out on top and the child has to think about which particular block fits in the different holes. I think you are born with some of that ability, but quite a bit of it is acquired through teaching methods as well.

Another stated:

Probably by being challenged by a group of [older] school teachers. School is different today than when I was coming along during the sixties. When I was a youngster in school, almost every teacher I had was a very strict disciplinarian and very demanding. I would say from the time I was perhaps ten years old on through high school, it wasn't
unusual to have at least 3 to 4 hours of homework every night. We always had homework to do on the weekend. I have noticed my children don't have homework on the weekend. I think they are spoiled little things and maybe mother ought to give them some anyway. Also, memorizing multiplication tables or mathematical formulas really wasn't a big issue when I was a kid in school. The types of teachers I was exposed to, well most of them, are [older] and their lives were those children. When I was a younger person in school, we did not think of our teachers as human beings. They were somewhere between here and God and the principal, of course, he was just one of the Gods, but I think that's what had a lot to do with it.

New Account Representative

Each of the nine new account representatives offered a response to this question. However, one simply stated "I don't know". None reported educational experiences that emphasized thinking skill development. The eight who felt they had some knowledge of developing thinking skills suggested they acquired them through experience.

One new account representative stated:

It's an ongoing process. As you get older and older, you get smarter. That's the reason a man 60 years old is smarter than I am. Because the older you get, the more knowledge you take in on life.

Another noted:

Experience, everyday experience.

Another stated:

Probably from experience.

Another stated:

I don't think anyone ever taught me how. I think it is something you develop, I do.

Teller

Each of the nine tellers responded to this research question. None of them reported educational experiences that emphasized thinking skill development. Four did not know how they acquired their thinking skills. Four believed they acquired thinking
skills through experience, and one offered a different explanation involving a thought puzzle.

One of the tellers who did not know where thinking skills were acquired stated:

I really don't know. I don't know.

Another noted:

I'm still learning. I don't know.

One of the tellers who believed experience was responsible for thinking skill development stated:

Just the fact that I've gotten to go to different places. I've been in different situations at different times working at several different offices. You have to be aware of what's going on. I think you are in a way constantly thinking about what's going on around you and being very conscious of what you are doing.

Another stated:

You just learn to remember things and keep the contacts. When I have a problem, I mentally note how I handle it. If it comes up somewhere down the line, I'll remember back and say such and such is the person I want and you reason it out and actually you're thinking about what it is you're going to be doing in advance.

The teller that offered another explanation for thinking skill development related a story that contributed to thinking skill development. That teller referred to the story as a thought puzzle that fosters thinking. Within this puzzle, a question was presented that required thought to solve. The thinking process was stimulated by the puzzle which the teller believed transferred to other situations. This transfer of thinking skills is an example of the general approach to teaching thinking skill development.

Summary

The behavioral event interview approach was used to obtain data from 27 bank employees in Virginia. Three branches of three different banks were represented. Further, three employees were interviewed at each branch, including a branch
manager, a new account representative, and a teller. This resulted in nine interviewees for each position.

The interviewees were experienced employees. The branch managers had a mean of 15 years in banking. The new account representatives had a mean of 12 years in banking. The tellers had a mean of 12 years in banking. Each of the interviewees had completed high school. Of the branch managers, two had earned an associate degree and five had earned a bachelor's degree. None of the new account representatives or tellers had earned postsecondary degrees.

The employees agreed that thinking skills are important to customer service. The mean response of the branch managers, new account representatives, and tellers who rated the importance of thinking skills to customer service, on a scale from 1, lowest, to 5, highest, was 4.89, 4.83, and 4.83, respectively.

The banking employees interviewed agreed that customer service is important to their total job. The mean response of the branch managers, new account representatives, and tellers who rated the importance of customer service to their total job, on a scale from 1, lowest, to 5, highest, was 4.72, 5.0, and 4.94, respectively.

Thinking skills accounted for a large portion of the interviewees' time spent on customer service. The branch managers, new account representatives, and tellers spend a mean of 71%, 81%, and 91%, respectively, of customer service time using thinking skills. Further, the interviewees devote a large portion of their work time to customer service. The branch managers, new account representatives, and tellers spend a mean of 73%, 81%, and 90% of total work time on customer service.

Sixty-two instances or segments of text from the interview data were classified as involving the use of creative thinking; decision making; problem solving; creative thinking and decision making; creative thinking and problem solving; decision making
and problem solving; and creative thinking, decision making, and problem solving in the events related by each type of employee.

Throughout the thinking skill instances, several themes emerged. Most notably was the recurrence of generating business for the bank and solving problems that arise. Further, underlying these themes, the concepts of helping customers and meeting their needs were observed. Some of the instances contained references pertaining to the handling of customers' accounts.

Five of the 26 interviewees who responded to the question of how they acquired thinking skills did not know how they acquired thinking skills. Eighteen believed they acquired thinking skills through experience. One of the interviewees offered another explanation. None of the respondents indicated having taken a course that emphasized thinking skill development. However, two indicated that educational experiences led to their thinking skill development.
Chapter 5
SUMMARY, FINDINGS, DISCUSSION, IMPLICATIONS, AND RECOMMENDATIONS

This chapter contains a summary of the study, including the purpose of the study and research procedures. A summary of the findings are presented. Additionally, discussion based on the findings of the study are contained in this chapter. Implications of the study are presented, and recommendations for further research are also provided.

Summary

Thinking skills, including creative thinking, decision making, and problem solving are based in cognitive and metacognitive psychological theories. The America 2000 (U.S. Department of Education, 1992) and SCANS reports (U.S. Department of Labor, 1991, 1992a, 1992b) have emphasized the need for thinking skill development in the nation. Lambrecht (1992) and Willis (1992) identified three approaches used to teach thinking skills. These are the general, infusion, and immersion. Additionally, Bailey (1990, May) concluded that tomorrow's workers will need greater thinking skill abilities. One workplace setting where Bailey identified thinking skills as being needed was in banking. Bennett (1992, January) emphasized that banks must provide superior customer service to grow and remain profitable. Thus, this study was developed to examine the use of thinking skills in a bank setting.

Purpose of the Study

The purpose of this study was to identify instances when workers in a business environment used thinking skills in a manner that was beneficial and to examine how they perceived they acquired thinking skills.
Research Procedures

The behavioral event interview approach was used to gather data for this study. This approach has been used in both industrial and educational research (Boyatzis, 1982; Schmidt, Finch, & Faulkner, 1992). Additionally, the behavioral event approach was selected because its purpose is to identify the necessary competencies of various jobs (McClelland, 1978). Further, it is designed to gather as many details as possible in the interviewees' own words. Twenty-seven bank employees were interviewed. The employees were from three Virginia banks and represented three branches of each bank. Further, within each branch, a branch manager, new account representative, and teller were interviewed.

The banks were selected based on their asset size and the willingness of management to participate in the study. The selection process began by telephone contact to administrators of the largest asset sized bank, according to Federal Reserve data dated June 30, 1991. If support was gained for the study, the person contacted was asked to recommend individual branch managers that would be responsive to participating in the study. Those branch managers were then telephoned and asked to suggest a new account representative and teller at their branches to interview. Appointments were set for the interviews. A follow-up information letter was sent to each interviewee prior to the interview. This process was repeated until 27 interviews were attained.

Each of the interviews was tape recorded and then transcribed. The Ethnograph computer program was used to facilitate handling of the large quantities of text generated in the interviews. The printed version of the interviews was reviewed and segments of the text were classified or coded to denote an instance of each thinking skill occurrence. These instances were a segment of an interviewee's response that
represented a thinking skill according to the definitions used for this study. The Ethnograph facilitated grouping the instances according to thinking skill category. The instances comprising each thinking skill were then reviewed and recurring themes noted.

Findings

Research Question One

What perceived thinking skills were used in customer service events that bank employees believed to be beneficial?

Fifty-five events were obtained from the interviewees. Branch managers provided 18, new account representatives provided 19, and tellers provided 18 of these. Overall, 62 segments of the interview text were classified as instances involving the use of thinking skills.

In the segments classified as creative thinking, a central theme of helping the customer and creating business by generating new ideas existed. The instances described by the branch managers contained the recurrence of generating business for the bank by selling a loan or contacting new customers. The new account representatives relayed only one instance of creative thinking. It dealt with the generation of a new investment alternative to suggest to a customer. The instances described by the tellers contained the theme of trying to help the customer and provide the best possible service. For example, one teller called elderly customers that have not been in the bank recently, and another suggested investment alternatives.

In the instances classified as decision making, two central themes emerged. One was determining when or which services to perform for a customer. The other was determining when to charge or refund a fee to a customer for a service, such as an overdraft. The branch managers' instances involved the manager's decision to perform
a service for a customer. Recurring in the instances relayed by the new account representatives was the theme of deciding whether to perform a service or deciding which service to offer a customer. Recurring in the instances described by the tellers was the theme of transferring money to a customer, such as lost interest on monies deposited in the wrong account. Also, noted was a teller determining whether to conduct a service.

In the instances classified as problem solving, two themes emerged. One was researching known problems with customer's accounts. The other was implementing the best solution to meet the customer's needs. Central to the events told by the branch managers was the theme of implementing the best solution to meet a customer's needs, such as the handling of savings bonds inherited by a customer. Two themes recurred in the instances described by the new account representatives. One was researching customer's accounts. The other theme was implementing the best solution for a customer, such as changing the type of checking account a customer has to reduce fees for the customer. The tellers relayed instances that centered around the theme of researching accounts to solve disputes or provide further information to customers.

Two instances were classified as creative thinking combined with decision making. Both were reported by a new account representative. The focus of the instances was on generating ideas or services to offer a customer and suggesting them to the customer.

In the instances classified as creative thinking combined with problem solving, a central theme of generating novel approaches to solving customers' problems and retaining business existed. The instances told by the branch managers centered on a novel approach to solving a customer's problem. Two themes emerged in the instances relayed by the new account representatives. One of these centered on
developing new business for the bank. The other saved a loss for the bank. Central to the instances described by the tellers was the theme of generating ideas to solve a customer's problem.

In the instances classified as decision making combined with problem solving, there was a central theme of selecting the best alternative to solve a customer's problem. The theme of evaluating and choosing the best alternative to a customer's problem existed in the instances reported by the branch managers. The new account representatives described two instances that were classified in this category. One instance involved the new account representative struggling for days over what type of investment to suggest to a customer. The other involved a decision to refund money to an upset customer. Only one instance of this category was reported by a teller. It involved a customer that could not get to the bank but asked if someone could come to her house.

In the instances classified as creative thinking and decision making combined with problem solving, the theme of developing new approaches to a customer's problem, determining the best alternative, and implementing that choice existed. Each of these was in the events related by the branch managers.

Research Question Two

How do bank employees perceive they acquired thinking skills?

None of the interviewees reported having taken coursework that emphasized the development of thinking skills. Eighteen of the interviewees attributed thinking skill development to experience. Two referred to educational experiences that impacted their thinking skill development. One interviewee described a thought puzzle that led to thinking skill development. Five of the interviewees were uncertain how they acquired thinking skills.
Discussion

The work environment examined in this study was most likely a highly structured one due to the size of the banks selected. All three banks were of large asset size, ranging from $11 to $117 billion. Therefore, the interviewees may have been limited in the level of creative thinking, decision making, and problem solving that they could use. The instances of thinking skills relayed by the interviewees ranged from the simple to the complex level. The majority of the thinking skill instances, however, appeared to require average thinking skill levels. For example, one manager described a situation that required the use of decision making skills. In this instance, a teller had asked the manager for assistance with a customer who was upset because the teller had refused to cash a check. The teller believed the customer was using false identification. Based on observation of the customer and identification information the customer provided, the manager evaluated the situation and decided this was a case of fraud and did not cash the check.

One of the simpler thinking skill instances was classified as a use of creative thinking. The instance was relayed by a teller who recalled performing a task that was not part of the tellers job description. The teller telephoned elderly customers that had not been in the bank recently to determine if they had developed any problems that prohibited their getting to the bank. An example of a complex level thinking skill instance was told by a branch manager. The instance was an example of combining creative thinking, decision making, and problem solving. The manager described a time when a long time customer was upset that he had been denied a car loan. The manager was able to creatively shift the customers debt level by offering a home equity loan to the customer. The manager decided the customer qualified for this type of loan and implemented this solution to solve the problem of the angry customer.
This study illustrated that thinking skills are used in the customer service aspect of banking. Instances of creative thinking, decision making, problem solving, and combinations of these were identified in the events relayed by the interviewees. Previous research has suggested that thinking skills are used in work settings without documenting real-life examples that illustrated thinking skill use. This study provided these examples. Further, the Carl D. Perkins Vocational and Applied Technology Education Act (1990) references the need for workers to possess thinking abilities. This study provides substance to this idea by identifying actual workplace instances of thinking skill use.

Based on a review of the instances classified as bank employees' use of thinking skills, two interrelated themes emerged. The first theme involved the generation of new ideas, determining the best alternative, implementing an alternative, or a combination of these in order to generate business or sales for the bank. The second theme involved the generation of new ideas, determining the best alternative, implementing an alternative, or a combination of these in order to solve a known problem. Both themes appeared in events described by the branch managers, new account representatives, and tellers.

Bailey (1990, May) referred to a need for tomorrow's workers to possess a greater level of thinking skill development. Specifically, Bailey noted banking employees are no longer limited to opening accounts by gathering information, such as name and address, from customers. Bailey concluded banking employees must think and sell other products and services to customers. Evidence in support of Bailey's research was found by the researcher of this study. Interviewees offered instances when they actually carried out the type of activity that Bailey identified as requiring greater levels of thinking skills. For example, a new account representative relayed a
story about a customer who came into the bank to open a checking account. While opening the account, the employee uncovered information that led the new account representative to suggest other bank services and products. The suggestions led to a mortgage being written by the bank's mortgage company.

Within *Skills and Tasks for Jobs: A SCANS Report for America 2000* (U.S. Department of Labor, 1992b), the Secretary's Commission on Achieving Necessary Skills provides examples of tasks that require the use of thinking skills from various jobs. Similar examples can be found in this study. The commission reported that a telemarketing representative must use creative thinking skills to assess the best way to convince a customer to buy a particular product. This study found examples of this use of thinking skills in events related by banking employees. For example, one new account representative described a time when a customer wanted to invest in a CD and would not consider a mutual fund which the bank employee believed was a better investment alternative. It took a full year and creative thinking for the new account representative to convince the customer to switch investment types, but the customer finally did.

Additionally, the commission reported that a hairstylist must use decision making skills when selecting among alternatives of a requested hair style, taking the customers' needs into consideration. Banking employees participating in this study revealed similar instances in their jobs. For example, one new account representative reported having to make a decision regarding which time deposit would be best for an IRA customer. Further, a branch manager used decision making skills to protect the bank's best interest by not cashing a check that was believed to be fraudulent. Similar check cashing situations that required the use of decision making skills were expressed in instances provided by all three levels of banking employees that were interviewed.
Further, the commission reported that a travel agent must use problem solving skills to compensate a customer who is dissatisfied with a travel experience. The interviewees in this study provided instances of this same type of situation. A new account representative recalled a time when a customer was very upset because the fee on a checking account varied depending on the activity in the account. This resulted in an overdraft. The account representative solved the problem by converting the customer’s account into a checking account that charged a flat fee. In this way, the customer knew the service charges in advance and could avoid becoming overdrawn because the customer could deduct the exact fee from the check register without guessing and underestimating.

Although the commission did not offer any examples of the combined use of thinking skills, they were found in this study. One new account representative combined creative thinking with decision making by uncovering needs that a customer had and determining which ones to try to meet. One manager combined creative thinking with problem solving by developing a novel way to finance a home without requiring the customer to provide the usual downpayment. In another instance, a new account representative creatively recovered $164 from a customer. This averted a problem because the money represented a loss for the bank. A manager that combined decision making with problem solving recalled deciding not to refuse payment on a check. The manager chose to telephone the customer instead and work out the problem by allowing the customer some flexibility with regards to making the account balance. Another branch manager combined creative thinking, decision making, and problem solving. This manager discovered a way to please a customer who was upset because the customer did not qualify for a car loan. The manager gave the customer a home equity loan to purchase the car and pay off other bills. The customer was happy with
this because the car could be purchased and money was saved due to the lower interest rate and tax benefits on home loans.

In addition to identifying real-life examples of thinking skill use, the researcher found that thinking skills were not acquired by the interviewees through direct coursework that emphasized thinking skill development or through employer sponsored training, although two interviewees related their thinking skill development to an educational experience. Not all of the interviewees were certain how they acquired thinking skills. However, experience accounts for the greatest perceived thinking skill development. Further, a central theme emerged from the respondents that offered other suggestions for their thinking skill development. This theme was that thinking skills were acquired by being challenged. The challenge can vary from a child's toy to riddles that require thinking to solve.

Implications

Based upon the findings of this study, educational focus is needed on thinking skill development. Banking employees believe thinking skills are important for them to perform their jobs well. However, thinking skills are not given adequate representation in the employees' education prior to employment. Further, despite the relatively large size of the banks, the employees did not report receiving any company sponsored training designed to develop thinking skills. Even though the interviewees in this study were experienced in their jobs, they did not report formal preparation for thinking skill development. Today's banking environment has become more customer service oriented, and customer service is believed to be critical to a bank's survival. There is less room for costly mistakes that occur through the traditional trial and error process used to develop thinking skills.
Instances of the thinking skill use detailed in this study can serve to build educational materials for the teaching of thinking skills. These instances provide actual workplace examples of thinking skill use that are needed for the infusion method of teaching thinking skills. Lambrecht (1992) and Willis (1992) refer to the popularity and advantages of this method of teaching thinking skills within context. This study provides a base for developing thinking skills in context with an emphasis on the two interrelated themes. The first theme involves generating new ideas, determining the best alternative, implementing an alternative, or a combination of these in order to generate business or sales for the bank. The second theme includes generating new ideas, determining the best alternative, implementing an alternative, or a combination of these in order to solve a known problem. The actual workplace examples of thinking skills use identified in this study add to the research and psychological base of thinking skills development. The study provides real-life situation uses of thinking skills that can serve as a basis for further study.

Recommendations

Based upon the findings and conclusions of this study, the following additional research is recommended.

1. Additional research is needed that examines other thinking skills. This study was limited to creative thinking, decision making, and problem solving. No attempts were made to determine if other thinking skills are used by bank branch managers, new account representatives, or tellers.

2. This study focused solely on the customer service aspect of banking. Further research is needed that examines the use of thinking skills in other aspects of bank employees' duties.
3. Additional research is needed that focuses on other types of banking employees. This study focused on bank branch managers, new account representatives, and tellers. Thinking skill use of other types of employees should be examined and compared to the instances found in this study.

4. This study focused on Virginia banks. Additional study is needed to determine thinking skill use in other regions of the nation. Similar findings in other regions will help establish the validity of the findings of this study.

5. Additionally, further research is needed to examine thinking skill use in other businesses or industries. This study focused on bank employees. Employees in other types of businesses should be studied for use of thinking skills.

6. Research that compares thinking skills used by new employees to those used by experienced employees is needed. The interviewees in this study were experienced; thus, no comparisons can be made between them and less experienced workers.

7. Case studies need to be developed based on the data gathered in this study. These cases could be used to teach thinking skills as they are used in real-life settings.

8. Research that examines curriculums and instruction in both school and employee training settings is needed to determine if thinking skills are taught. Perhaps, learners in these situations do not relate what is learned to real-life uses of the skills.
REFERENCES
REFERENCES


Miguel, R. J. (1985, May). Education and employment: Where we are and where we ought to go. Annual policy forum proceedings. Columbus, OH: The Ohio State University, National Center for Research in Vocational education.


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APPENDIX A

Interview Instrument
INTERVIEW INSTRUMENT

1. Date and time: __________________________

2. Branch employee's name: ______________

3. Bank employee's position: ______________

4. Bank employee's gender: ________________

5. Bank name: ______________________________

6. Bank location: ___________________________

7. Bank asset size: _________________________

8. Branch asset size: _______________________

(START)
"Mr./Mrs./Ms. ________, as I mentioned, the purpose of this study is to discover times when you as a bank employee have used thinking skills. Further, we will discuss how you acquired thinking skills. Do you have any questions at this time?"

"Before we begin, let me assure you that your responses will be kept confidential. Would you mind if we recorded the interview?____ (If no, turn on recorder and say "If there is anything you do not want me to record, let me know, and I will turn off the recorder.")"

Hand bank employee the definition of thinking skills and say "This is a copy of the definition of thinking skills previously sent to you. I would like for you to read the definition silently while I read it aloud."

After reading the definitions, ask "Do you have any questions regarding the definition of the thinking skills?" (If no, proceed.)
1. Think about a time in the past when you felt especially good about the way you used thinking skills in your performance of customer service duties. I would like you to tell me about that time and please be as complete as possible in your response. (Ask probing questions, if necessary.)

Who was involved and how?
What led up to the situation?
Describe the situation?
How did you feel? How do you think the customer felt?
What were your thoughts? What do you think were the customer’s thoughts?
What happened?
How did it all turn out? (outcome)
Why did you choose to tell me about this particular time?

* Repeat question #1. Obtain two events.

2. Think about a time when you may have been taught the thinking skills you used in the situation you just described. Please tell me the circumstances surrounding when you were taught those thinking skills. (Ask probing questions, if necessary.)

Who was involved and how?
Experience - What kind? Where? When?
Describe the situation?
What happened?

Think back to the first time you were faced with a similar problem. What were your thoughts/feelings then?

How did you feel?
What were your thoughts?
3.A. I would like you to rate how important thinking skills are to customer service on a scale from 1 to 5, with 5 being the most important.__________

3.B. I would like you to rate how important customer service is to your total job on a scale from 1 to 5, with 5 being the most important.__________

4.A. I would like you to tell me what percent of customer service time you spend using thinking skills.__________

4.B. I would like you to tell me what percent of total work time you spend on customer service.__________

Thanks so much! Now I need to get some information about your experience and education.

Experience: Total years in banking_________________________

Years with this bank______________________________.

Years at this branch______________________________

Other banking positions and years held

______________________________

______________________________

______________________________

______________________________

______________________________

Education: Degree(s)/Certificate(s) earned

(specific major) ___________Certificate

____________________Associate

_____________________Bachelor

______________Beyond

__________________Other

Thank you very much. Your cooperation will assist greatly in documenting times when bank employees used thinking skills in a beneficial manner and in examining how those thinking skills were acquired.

I have enjoyed talking with you.
THINKING SKILLS

Thinking skills are mental processes that involve generating novel or new ideas, evaluating and choosing the best alternative, or recognizing problems and developing and implementing a solution.
APPENDIX B

Verification of Transcript Accuracy
June 17, 1993

I certify that I have listened to the tape of an interview between Robert C. Magee, the researcher, and the three anonymous interviewees comprising the field study. Further, I confirm that the transcribed version of the interview accurately represents the taped information.

Sincerely,

Jerry T. Kandies
June 17, 1993

I certify that I have listened to the tape of an interview between Robert C. Magee, the researcher, and an anonymous interviewee. Further, I confirm that the transcribed version of the interview accurately represents the taped information.

Sincerely,

[Signature]
Stephan R. Nelson
June 17, 1993

I certify that I have listened to the tape of an interview between Robert C. Magee, the researcher, and an anonymous interviewee. Further, I confirm that the transcribed version of the interview accurately represents the taped information.

Sincerely,

Christine N. O'Keefe

Christine N. O'Keefe
June 17, 1993

I certify that I have listened to the tape of an interview between Robert C. Magee, the researcher, and an anonymous interviewee. Further, I confirm that the transcribed version of the interview accurately represents the taped information.

Sincerely,

[Signature]

Michael P. O'Keefe
APPENDIX C

Introductory Letter to Bank Manager
Current Date

Robert C. Magee, Project Coordinator
Business Education
Division of Vocational and Technical Education
Lane Hall
Virginia Polytechnic Institute and State University
Blacksburg, Virginia 24061-0254

Name, Branch Manager
Bank Name
Address

Dear Name:

I am writing regarding our phone conversation on (date). As we agreed, I will be visiting your bank branch on (date) at (time) to conduct interviews for my research study. As you recall, I will be interviewing you and two other employees, a teller and a new accounts representative. Each interview will last approximately 30 minutes.

Please inform your employees the interviews will be tape recorded and assure them that the interview will be confidential. Only the information will be shared. Neither the names of the employees nor the bank will be disclosed.

Please distribute a copy of the enclosed memo to each of the interviewees as soon as possible.

Thank you for your cooperation in making this research effort a success. If you need to speak with me, please feel free to call my office at (703)231-5471.

Sincerely,

Robert C. Magee, Project Coordinator
Business Education
Current Date

To: Interviewee

From: Robert C. Magee, Research Coordinator

Subject: Interview regarding use of thinking skills

As part of a research project at Virginia Polytechnic Institute and State University (Virginia Tech), I will be visiting your bank branch. The purpose of the project is to discover times when you as a bank employee have used thinking skills. Your branch manager will provide you with the exact time of my visit. At that time, I will be personally interviewing you for approximately 30 minutes.

The interviews will be tape recorded and confidential. Only the information will be shared. Your name will not be disclosed, nor will your supervisor know what we discuss.

During the interview, I will be asking you to describe in detail two customer service situations that you feel resulted in a beneficial outcome in which you used thinking skills. Additionally, I will be asking you to describe how and when you where taught thinking skills.

A definition of thinking skills is attached. Please read the definition carefully before my visit with you. If you have any questions concerning them, we will discuss them before the interview.

Thank you for your help in making this research study a success.
THINKING SKILLS

Thinking skills are mental processes that involve generating novel or new ideas, evaluating and choosing the best alternative, or recognizing problems and developing and implementing a solution.
VITA

Robert Coleman Magee
909-A Montgomery Street
Blacksburg, Virginia 24060

Robert Coleman Magee was born on July 7, 1963 in Richmond, Virginia and spent his childhood in nearby Chester. After completing high school, Robert earned an Associate in Arts degree from Caldwell Community College in Hudson, North Carolina in 1984. Robert continued his education and received a Bachelor of Science in Business Administration with a double major in finance and banking from Appalachian State University in Boone, North Carolina in 1986. He later returned to school and earned a Master of Business Administration from Virginia Polytechnic Institute and State University (Virginia Tech). Upon earning his MBA in December of 1991, Robert began the vocational and technical education doctoral program at Virginia Tech. He concentrated in business education and received the Certificate of Advanced Graduate Studies in May, 1993. Robert completed the Doctor of Philosophy in the summer, 1993.

Robert has worked and gained credit and collection experience in Florida with Associates Financial Services Corporation. Additionally, he operated his own business. He experienced the many aspects of a small business, including customer service, cash flow, record keeping, and staffing.

Robert has gained teaching experience with National Business College in Bluefield, Virginia and has had two years experience as a substitute teacher in grades K-12. While at Virginia Tech, Robert served as both graduate teaching assistant and graduate research assistant. He has served as research assistant, facilitator, and organizer for several research projects of the National Center for Research in Vocational Education. Additionally, Robert has been co-author of a paper presented in
Finland and has co-authored an article that has been submitted for publication. Currently, Robert is helping to prepare the Delta Pi Epsilon Business and Office Education: Review and Synthesis of Research covering 1980 through 1990.

Robert Coleman Magee