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Accelerated learning methodology applied to a corporate training program

Darlene Austin Bradner
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Accelerated learning methodology
applied to a corporate training program

by

Darlene Austin Bradner

A dissertation submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

Department: Professional Studies in Education
Major: Education (Adult and Extension Education)

Major Professor: John P. Wilson

Iowa State University
Ames, Iowa
1996

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This is to certify that the Doctoral dissertation of

Darlene Austin Bradner

has met the dissertation requirements of Iowa State University

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For the Major Department

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For the Graduate College
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ABSTRACT

The purpose of the study was to investigate the effectiveness of Accelerated Learning methods in a corporate training program. More specifically, the researcher wanted to know if Accelerated Learning significantly improved the employee's job knowledge, skills, and on-the-job performance when compared with traditional training methods. The Accelerated Learning training involved concepts and methods originally developed by Georgi Lozanov (1978) and adapted by Don Schuster (1986, 1989, 1991), Colin Rose (1985), Lynn Dhority (1991), Allyn Prichard and Jean Taylor (1980), and others. Traditional training methods include commonly used learning activities such as case problems, role play situations, short lectures with visual aids, question-and-answer sessions, and hands-on practice.

The research design was a preexperimental design with a control group which used traditional training methods (26 participants) and an experimental group which involved Accelerated Learning methods (36 participants). Participants were in a required 64-hour new employee training program in a major financial organization in a midwestern city. One in-house trainer delivered all the training programs. To minimize contamination between the two methodologies, the trainer had minimal exposure to Accelerated Learning until after the control group had been trained and tested. Three different measurements were used to gather data from participants at the end of training: a cognitive, paper-and-pencil test to determine job knowledge; a computer skills test in a job simulation to determine
transfer of skills to the job; and a telephone customer service simulation to
determine transfer of skills to the job. A fourth measure, on-the-job performance
data, was collected one month after the end of training. Data were analyzed
through the use of frequency reports, reliability tests, t-tests of two means, and
ANOVA techniques.

The findings of the study support the research hypotheses that the
experimental group will perform at a significantly higher level (p ≤ .05) than the
control group on a cognitive test of learning and on a computer skills test.

Although participants in the Accelerated Learning group outperformed the
traditional training group, the findings do not support the research hypotheses that
the experimental group will perform significantly better on a telephone customer
service skills test or on actual on-the-job performance measured one month after
the end of training.

The findings of this study suggest that Accelerated Learning is a worthy
teaching/learning method and may hold much potential for improving the
effectiveness of training and development programs.
1. INTRODUCTION

Improving organizational performance through employee training and development programs is a major effort in this country. By some estimates, corporations, nonprofit organizations, and governments spend about $50 billion each year on training programs (Broad & Newstrom, 1992). Other sources provide even higher estimates. Wexley and Latham (1991) state that U. S. businesses have spent in excess of $2 trillion over the past ten years attempting to train their workers. Although these figures vary, the fact remains that having a well-trained workforce is a primary objective in most organizations.

It's not surprising, then, that organizations and specifically those persons most responsible for the training function have a constant agenda of finding ways to improve training effectiveness. In the last few years, organizations have attempted to improve training through experimenting with new learning "methods."

One of these methods is Accelerated Learning, which is also known as Suggestopedia, Suggestive Accelerative Learning Techniques (SALT), Superlearning, Integrative, and Enhanced Learning (Fairbanks, 1992).

Accelerated Learning is a unique approach in that it is a holistic method of learning. It is a "multisensory, brain-compatible teaching and learning methodology" (McKeon, 1995, p. 65). It involves the conscious and subconscious mind and the left and right brain hemispheres through a structured, sequenced series of events and planned repetition. Accelerated Learning activates the whole
brain by using, for example, music, color, physical and mental relaxation, and games.

Background of the Study

In the mid-1900s, Georgi Lozanov, a Bulgarian psychiatrist, educator, and researcher introduced the new concepts of "suggestology," which is the study of suggestion, and "suggestopedia" (from the root words suggestion and pedagogy), which is the application of suggestion to education and learning. Lozanov has spent 40 years investigating and applying the phenomena of suggestion to teaching and learning.

In the early 1970s, Don Schuster and others developed Suggestive-Accelerative Learning Techniques (SALT) as an American synthesis of Suggestopedia (Schuster & Gritton, 1986). Since then many others have used and researched Accelerated Learning in grades K through 12, in many types of adult education programs, and with students with disabilities. Accelerated Learning has been shown to promote significant success in many different content areas with all types of students. Although business and industry training programs frequently contain Accelerated Learning methodology, very little controlled research has been conducted, documented, and published in these settings.

Lozanov's theory of Suggestopedia comes together in the three main principles of his work (Lozanov, 1978, p. 258; Dhority, 1991/1994, p. 16; Schuster & Gritton, 1986, p. 5). First, learning should be characterized by the feeling of joy
and the lack of tension. Joy in this case means the delight and pleasure which comes from authentic learning, from the experience of having new understanding, new competence, or new self-esteem. This joy comes from an inner source and not from a pleasant outward situation.

Second, a unity of conscious and subconscious levels is vital for learning. This principle refers to the holistic, global nature of learning. The term "subconscious" refers to things beyond our normal conscious awareness.

Third, suggestion is the means for using the normally unused reserves of the mind for increased learning. Learning increases rapidly not only when positive beliefs about one’s capabilities are accepted but when the barriers of what we think we can’t learn are eliminated.

These three principles apply to the basic phases of the Lozanov method: preparing the students to learn through physical and mental relaxation exercises; presenting material in a global context prior to the dynamic presentation and then reviewing it while listening to mind-calming music; and practicing the new material learned through games and simulations.

**Problem under Investigation**

The Financial Center (pseudonym) is a typical organization in its desire to improve training effectiveness. During the past few years, The Financial Center implemented participative learning methods into their training programs, including case problems, role plays, and behavior modification video tapes. The Financial
Center believed their current training was very effective. However, they were concerned, as are most organizations, whether their training was providing optimal on-the-job performance. Productivity was good, but could it be better? The Financial Center and the researcher were interested in knowing, quantitatively, if another method, Accelerated Learning, was more effective than their current training methods.

The purpose, then, of this quantitative research study was to determine the effectiveness of Accelerated Learning methods when compared with the effectiveness of the same course taught using traditional training methods. The corporate training program was an eight-day introductory course for new employees of The Financial Center and involved mainly customer service and computer skills. The research results of the study were used to determine whether new employees involved with the Accelerated Learning sessions had better job knowledge, skills, and performance than employees in the traditional training sessions.

The research problem can be stated as: Do employees in the training program involving Accelerated Learning perform significantly better than employees in the traditional training program on tests of job knowledge, skills, and performance? More specifically, the researcher wanted to know if the experimental group (those persons who participate in the training program which has been enhanced with Accelerated Learning) would perform at a significantly higher level (p ≤ .05) on measures of job knowledge, computer skill, customer
service skill, and actual on-the-job performance than the control group (those persons who participate in the training program which is delivered using traditional methods) would perform on the same measures.

**Research Hypotheses**

To investigate this problem, four research hypotheses were identified:

**Research Hypothesis 1.** The participants in the experimental group will perform at a significantly higher level ($p \leq .05$) on a cognitive test of job knowledge than the participants in the control group.

**Research Hypothesis 2.** The participants in the experimental group will perform at a significantly higher level ($p \leq .05$) on a skill test of computer usage than the participants in the control group.

**Research Hypothesis 3.** The participants in the experimental group will perform at a significantly higher level ($p \leq .05$) on a skill test of telephone customer service than the participants in the control group.

**Research Hypothesis 4.** Four weeks after training, the participants in the experimental group will perform at a significantly higher level ($p \leq .05$) on three electronically generated performance scores than the participants in the control group.
Definitions

Accelerated Learning. A learner-centered, whole brain approach to teaching and learning which either increases the amount of learning or shortens the time involved in learning.

Baroque Music. A type of music composed in Europe from about 1600 to 1750; also called pre-classical.

Classical Music. A type of European music composed from approximately the mid 1700's to the early 1800's.

Hawthorne Effect. The tendency for research participants to respond positively to a change because of the attention being given them rather than because of the change itself.

Learning. To acquire information, knowledge, comprehension, or mastery of skill through study and/or experience. This definition includes memorizing and recalling specific information.

Suggestology. The study of suggestion as introduced by Dr. Georgi Lozanov.

Suggestopedia. The application of suggestion to education and learning.

Traditional training methods. Commonly accepted training activities, including, for example, case problems, role playing situations, question-and-answer sessions, and short lectures supplemented with visual aids.
Significance of the Study

Although trainers in business and industry have been using Accelerated Learning techniques for twenty years, most of the results are not documented. The few results that are documented are usually anecdotal notes: for example, the completed "Participant Reaction" sheets for Accelerated Learning often show a higher level of satisfaction than they do for traditional training methods; participants more often verbally explain to trainers the fun they've had in the Accelerated Learning class; and participants want to transfer to another section if Accelerated Learning methods are not being used in their training section. Sometimes trainers can document they have been able to reduce the number of training hours required for a particular program.

Although these anecdotes are sometimes noted, very little formal, controlled research has been conducted on Accelerated Learning in business and industry. This study, therefore, is an important contribution to an area nearly void of research.

This study is also significant because it encompassed three of the four "levels" of training evaluation. These levels were identified originally by Dr. Donald Kirkpatrick and are commonly accepted by training and development professionals (Robinson & Robinson, 1989).

This research involved level two which evaluates cognitive learning and answers the question: Did the participant gain additional knowledge as measurable on a paper-and-pencil test? The study also addressed level three which measures
the transfer of skills to the job situation. In particular, computer skills and telephone customer service skills were evaluated. The fourth level of evaluation is the measurement of bottom-line impact of the training. This study measured each participant's contribution to the weekly operating results.

The first level of evaluation, which was not addressed in this study, measures the learners' reaction to the training session and is equivalent to a customer satisfaction index. Often called a smile sheet, this level evaluates the participants' reaction to questions such as: Did the training meet your expectations? What were the strongest and weakest areas of the training?

Assumptions of the Study

It was assumed the content of the training covered the appropriate and correct topics needed to perform well on the four measurement areas: Cognitive learning, computer skills, customer service skills, and on-the-job performance.

It was assumed the evaluation instruments were valid. Management personnel from The Financial Center were the final authority in determining whether the questions on the instruments were measuring the most significant content areas.

It was assumed participants in this study gave their best efforts during the training sessions, while completing the evaluation instruments, and on the job.
It was assumed the participants in this study were willing participants, as explained in the Informed Consent information distributed in writing and explained verbally to each person.

It was assumed the class activities were consistent within the three control group classes and within the three experimental group classes.

It was assumed the environment used for testing was conducive and non-distractive to participants.

It was assumed test scores were not altered significantly as a function of timing of the tests, such as morning or afternoon.

Limitations of the Study

The generalization of the research results may be limited to only future sessions of this introductory training program rather than to other training programs offered by The Financial Center. The following limitations may contribute to a hesitation to generalize to all training programs:

This research involved a total of 62 participants in six classes (3 classes constituted the control group and 3 classes comprised the experimental group). A larger group of participants would have been desirable.

This research used convenience groups (those persons hired as new employees to perform a specific job function) rather than randomly selected participants.
This research was limited to an investigation of Accelerated Learning in one training program only, an eight-day introductory program for new employees. Researching an assortment of training programs would have been preferred.

This research was limited to gathering data about job performance four weeks after the end of training rather than a longer-term approach to measuring performance.

The actual learning environment and use of particular learning techniques were not as controlled as were those of the original Suggestopedia experiments. The researcher's presence in the classroom during the eight-day programs for all six classes would have been desirable.

This research did not use a pretest because of the technical nature of the test information. It was deemed that participants would do very poorly on the pretests unless they had worked previously at The Financial Center in the same capacity as this position. In fact, for the computer skills test, the participants would not have been able to turn on the computer system and get into the programs without any training. On the remaining tests, all of which were very detailed, a new employee might become extremely distraught from not knowing any of the answers.

The researcher had major input into the design of the measurement instruments. Although she believes she remained unbiased in the potential carry-over from the test construction to the training design, it would have been better if a third party would have designed and scored the measurement instruments.
Individual participant scores could have been influenced by outside factors, unknown to the researcher, such as family emergencies.

**Organization of the Dissertation**

This research is presented in five chapters. Chapter 1 presents an overview of the study and introduces the problem under investigation including its significance and limitations. The theoretical foundations of Accelerated Learning, previous related research studies, and the use of Accelerated Learning in business and industry today are reviewed in Chapter 2. A detailed explanation of the procedures used in this study, for example, the research design, the participants, the variables, and the measurement tools, is presented in Chapter 3. Chapter 4 reports the results of the study, and Chapter 5 presents the discussion, conclusions, and recommendations. The Appendixes and References conclude the study.
2. REVIEW OF RELATED LITERATURE AND RESEARCH

The review of literature and research contains four sections. The first section considers the theoretical foundations of Accelerated Learning. The second section reviews and critiques the research findings of previous, related studies. The third section explains the use of Accelerated Learning in business and industry today. This topic is treated as a separate section because the practice of Accelerated Learning in business today is quite different from its original theoretical foundations. The use today is also quite unlike the Accelerated Learning methodologies used in most of the research studies. The last section summarizes the key concepts of the chapter.

Theoretical Foundations of Accelerated Learning

The philosophy of Accelerated learning is rooted in learning theory developed by Dr. Georgi Lozanov of Sophia, Bulgaria. Dr. Lozanov, a physician and research psychologist, obtained his Ph.D. for his work on the application of suggestion in the fields of medicine and education (Rose, 1985, p. 83). In 1955, he published results of experiments with suggestive hypermnnesia, most of which included hypnosis. In that same year, he started observing a considerable increase in memory by suggestion alone in a normal waking state. His first subject, an arc-welder, attended evening high school classes and needed to memorize a Russian poem by that evening. Dr. Lozanov used positive suggestions with him for one
session, and the next day the student reported to him, "What did you do? It was a miracle. I was asked to recite the poem, so I tried and to my surprise I recited the whole of it without a mistake. I had heard it only once when we had the lesson" (Lozanov, 1978, p 12).

Lozanov repeated the experiment with other subjects and became convinced this method of learning gave better results than teaching people with traditional methods.

**Suggestopedia**

Lozanov founded a new learning theory and coined the terms Suggestology and Suggestopedia. Suggestology is the study of suggestion, or as Lozanov (1978, p. vi) defines it, "the science of the art of liberating and stimulating the personality both under guidance and alone." Suggestopedia means the application of suggestion to the learning process (pedagogy).

Erickson (as cited in Prichard & Taylor, 1980, p. 3) provides a more useable definition of suggestion: "the art of giving careful, casual direction while allowing the illusion of freedom within a created framework."

In 1965, a research group was formed at the Pedagogy Research Institute for the study of teaching foreign languages using the Suggestopedic system. In French and English courses, Lozanov (1978, p. 27) found that the memorization of the experimental groups using Suggestopedia was accelerated 25 times over that attained in learning by conventional methods. Additional experiments continued to bring positive results.
Suggestion in learning works because it can help unlock untapped potential when the student is ready to learn. In order for the student to be ready to learn, and therefore to be accepting of Suggestology, anti-suggestive barriers need to be overcome successfully. These barriers are negative mental blocks that inhibit learning, such as the notion that our ability is limited. These blocks are self-imposed, artificial limitations, but are powerful. According to Lozanov, as stated in Dhority (1991/1994, p. 13), "The ingrained, limiting attitudes and beliefs which each of us to some degree possesses, result largely from our childhood conditioning. There is no suggestion without desuggestion, without freeing para-consciousness from the inertia of something old." When people are freed of unconscious barriers, they will have confidence in the teacher and they will be relaxed so the learning process may proceed. This approach, then, gives much importance to the teacher/student relationship so the students can reduce their learning barriers.

By removing the mental barriers through desuggestion, Lozanov (1978) believes individuals can access significant amounts of heretofore untapped potential. The brain is capable of much more than its current usage. Rose (1985, p. 127), states the method "seems to work not by actually increasing the capacity of the human memory, but by overcoming the expectation that memory is limited. In other words, it desuggests the negative expectations of limited ability we have built up throughout our normal learning experiences and allows our innate natural mental ability to operate more fully." Schuster and Hayward (1989, p.163) agree
when they say the major reason Suggestopedia works "is the expectation of improved performance on the part of the students."

Suggestion in Practice

Lozanov identified several key conditions necessary to practice Suggestopedia.

Authority. In Suggestopedia, authority is equated with prestige, respect, or credibility given to those who are experts in their field. Instructors with authority are not only masters of the content but also of the art of facilitating the teaching process. A teacher with authority creates an atmosphere of confidence and intuitive desire to follow the set example (Lozanov, 1978, p. 187). Authority is portrayed through trustworthy communication and mannerisms. Lozanov, however, cautions us not to confuse authority with authoritarianism, which could be used to harm or belittle students (cited in Du-Babcock, 1986, p. 22).

Infantilization. "Learning," Schuster and Gritton (1986, p. 89) say "is the natural state of an infant and does not require an active mental process, but occurs in the random order of the real world." Infantilization, then, refers to creating a child-like, playful state because anything is possible in the minds of children at play. A pleasant, positive atmosphere where students can take risks enhances learning.

Creating this playful atmosphere is connected to the degree of authority of the teacher. If trustworthiness is present, adults will become involved more quickly in the games, songs, play acting, and other spontaneous actions of children.
This active mental state also may bring back pleasant learning experiences from an earlier age and therefore may assist with desuggestion.

**Double-planeness.** Lozanov uses the term double-planeness to describe the levels of consciousness involved in a communication exchange. In addition to the conscious level, Suggestopedia is concerned with factors operating below the threshold of consciousness but which nevertheless are exerting an often decisive suggestive impact (Dhority, 1991/1995, p. 14). These factors are operating at the para-conscious level, which Lozanov (1978, p. 74) said is more or less the unconscious level. These factors include the teacher's attitude which is communicated through, for example, voice tone, listening and responding, body mannerisms, facial expressions, clothing, promptness, and attention to room set-up. Schuster (1991) refers to the two planes as the teacher's verbal message (the spoken word) and the non-verbal message (the way the words were spoken). Both Lozanov (1978) and Schuster (1991) stress the importance of the integration and the consistency of the conscious and paraconscious levels.

Voice intonation is a factor of double-planeness. When instructors speak with confidence, they enhance their authority through the para-conscious, non-verbal plane. The instructor's conviction that the learning will be natural and without strain is conveyed through the positive attitude in his/her voice. "The tone of the voice conveys the real underlying message of speech" (Du-Babcock, 1986, p. 24).
Rhythm. Lozanov (1978) says rhythm is a basic biological principle—a reflection of the rhythm in nature such as daily rhythms, seasonal rhythms, and annual rhythms. These rhythms affect our physical and mental lives. Rhythm in presentations can engage non-specific mental activity which can result in overcoming anti-suggestive barriers (Shrum, 1985, p. 30).

Although Lozanov provides no direction for "correct" rhythm in presentations, he does stress the suggestive effect of rhythm in music and dance. Both rhythm and intonation produce a paraconscious response that allows the brain to absorb, maintain, and recall more information than is expected normally (Du-Babcock, 1986, p. 24).

Pseudopassiveness. Pseudopassiveness, also called passive concert review, may be one of the most unusual aspects of Suggestopedia for many instructors. Pseudopassiveness refers to reviewing the content just learned while the students are in a mentally relaxed state and therefore highly receptive to the information being presented. Schuster and Gritton (1986, p. 92) and Schuster (1991, p. 353-354) say the passivity should be similar to what you experience at a recital or movie: physically inactive, relaxing, ignoring the setting and people around you, and concentrating on the experience mentally. Lozanov (1978, p. 198) says, "listeners make no intellectual efforts to memorize or understand; they allow themselves to apprehend the program of music emotionally." The mind is free and open and not worrying about what the instructor is saying. The pseudopassive
phase is especially important because it is created by meditative self-suggestion, authority, and infantilization, along with the music itself (Schuster, 1991, p. 354).

**Three Principles of Suggestopedia**

Lozanov (1978, p. 258) identifies three principles which underlie the Suggestopedia theory just explained. The three principles are: joy or the absence of tension, unity of the conscious and paraconscious, and suggestion as the link to the reserve capabilities of the mind.

Although joy, Dhority (1991/1994, p. 16) says, can refer to pleasant outward experiences, in this context it is referring more to the pleasing and gratifying experience of authentic learning—the experience of new understanding, new competence, or new self-esteem. The absence of tension increases learning because negative emotions such as stress, depression, confusion, sadness, and anger can hinder learning (Schuster & Gritton, 1978, p. 22).

Unity of the conscious and paraconscious is the second principle and refers to teaching from an integrated, holistic viewpoint. When the material to be learned is globalized and there is unity between the conscious and paraconscious, more learning will occur.

Entering the reserves of the mind through suggestion and desuggestion, as identified earlier, is the basis of Suggestopedia. Lozanov (cited in Schuster & Gritton, 1986, p. 23) states, "Suggestion is a constant communication factor which chiefly through paraconscious mental activity can create conditions for tapping the functional reserve capacities."
Implementation of Suggestopedia

To be practiced, a learning theory must be transformed into daily learning activities. Suggestopedia is no exception and is categorized into three learning activity phases: Preparation, Presentation, and Practice. These phases were identified originally by Lozanov and were expanded by Schuster and Gritton (1986) in their SALT (Suggestive-Accelerative Learning Techniques) methodology.

Prior to providing preliminary learning activities to students, however, care must be taken to ensure a relaxed, pleasant, comfortable environment within the learning room. This can be accomplished through the use of plants, serene posters, comfortable chairs, good lighting and ventilation, pleasant music, flip charts, and/or white- or chalk-boards with colored markers. The walls can help the playful atmosphere by displaying colorful posters, maps, and pictures. The instructor can assist this atmosphere by communicating in a warm and open (non-threatening) yet professional manner. This environment adds up to a welcoming atmosphere.

Preparation. The preparation phase consists of physical and mental activities which cause the student to center on the instruction at hand and be ready to learn. These activities are in the form of physical relaxation exercises, such as stretching and bending, and mental relaxation exercises, such as concentrating on slow breathing or imaging a serene, comfortable setting. Schuster and Gritton (1986) recommend including suggestive set-up in preliminary activities. Suggestive set-up is an opportunity to reduce learning barriers by helping learners image, or relive mentally, their early pleasant learning experiences or by imaging
themselves as a successful lifelong learner. The preliminary activities should be filled with positive images and affirmative suggestions, such as "you'll find learning easy today as we study this lesson."

**Presentation.** Schuster and Gritton (1986) suggest the presentation contain several subphases: review, preview, dramatic presentation, and passive review with music.

In each of these subphases, learning aids, such as imagery, music, and props, assist with learning. Visual aids, such as transparencies, handouts, and posters, are also helpful.

In the review subphase, the most important points from previous lessons are presented so that students may better understand the big picture and the integration of the information previously learned.

In the preview subphase, students are presented with a global overview of what will be covered during today's session. This subphase is what Ausubel (1960, as cited in Schuster & Gritton, 1986) calls an "advance organizer."

In the dramatic presentation, the new material is presented in an interesting and dramatic manner which facilitates mental image making on the part of the learner. With classical music in the background, the instructor deliberately uses voice modulation, gestures, and visual aids.

In the passive review subphase, Baroque music, which has a slower, more relaxing beat, is played while the instructor thoroughly reviews the material
covered in that lesson. In another variation, Fairbanks (1992) suggests this subphase be placed after the practice rather than before it.

In Lozanov's early days of experimenting with Suggestopedia, students practiced relaxation exercises prior to this passive review section. Although the form of relaxation is vague, it is presumed this relaxation took the form of yoga and other breathing exercises (Felix, 1992, p. 52). Later Lozanov dropped these exercises because the concert part of the session attained sufficient relaxation.

**Practice.** The practice subphase is also known as the activation phase. It consists of activities in which learners use the information just acquired. This is the subphase which usually contains the most childlike (not childish) exercises, for example, playing bingo, jeopardy, or other games using the information from this session. Other examples include writing or singing songs; making mind maps of information learned; interviewing each other about the most important points of the lesson; doing role plays, case problems, and round robins; and hands-on usage of equipment, such as computers. This phase also can include non-graded quizzes.

The lesson can end with a minute of silence at the close of the session to help prepare students to reenter their "real life."

**Previous Research Findings**

An extensive base of research has been published regarding Accelerated Learning. This researcher chose to cite enough studies to offer a representative sample of previous research. The studies cited are categorized into four groups:
Language studies that produced a significant difference, Language studies that revealed no significant difference, Non-language studies that produced a significant difference, and Non-language studies that revealed no significant difference.

**Language Studies That Produced a Significant Difference**

Initial Suggestopedia research studies were conducted primarily on foreign language classes, probably because of Lozanov's reports of strong gains in foreign language acquisition and retention.

Dr. Lozanov spoke at New York State College in Albany in 1969, and soon after, research studies on Suggestopedia began in the United States. Marina Kurkov at Cleveland State University conducted the first documented experiment involving Suggestopedia in the United States in 1971 (cited in: Du-Babcock, 1986; Schuster & Gritton, 1986; Questad, 1992). She covered two quarters of Russian in one quarter with an experimental group of 14 students and the usual one quarter of Russian in one quarter with a control group of 19 students (Kurkov, 1977). In a pretest, no significant difference between the two groups was identified. The control group averaged a course grade of 2.5 (C) and the experimental group 3.0 (B). At the beginning of the next quarter, Kurkov found the experimental group had no problem assimilating into a third-quarter Russian class.

Dr. Donald H. Schuster, psychology professor at Iowa State University, is credited with westernizing Suggestopedia methods in educational settings in the United States. He began research in the early 1970's to determine the efficacy of
Suggestopedia methods in American classrooms. In 1976 he founded the Society of Suggestive-Accelerative Learning and Teaching (Questad, 1992). The Schuster approach to Suggestopedia, called Suggestive-Accelerative Learning Techniques (SALT), became widely accepted because of the publication of his research results in the journal he founded, *The Journal of Suggestive-Accelerative Learning and Teaching*. The journal was later renamed the *Journal of the Society for Accelerated Learning and Teaching*. Under Schuster's guidance, Iowa State University began an experimental teacher-training program in Suggestopedia and also started a cooperative project with the Des Moines School District.

In 1972 Schuster (as cited in: Schuster & Gritton, 1986, p. 38-39; Dubabcock, 1986 p. 27; and Schrum, 1985, p. 46-47) conducted a preliminary evaluation of Accelerated Learning in a college-level beginning Spanish class. Schuster taught one section using Accelerated Learning methodology. Two other sections of the same class taught by other instructors using conventional teaching methods constituted the control group. The students in the experimental group attended class two hours per week compared with six hours a week for the control group students. The control group instructors developed the final examinations with no input from Schuster. Analysis of the results showed no significant differences in achievement between the experimental and control groups. The experimental group had achieved the same results as the control group in one-third the length of time.
In 1976, Bordon and Schuster (cited in: Schuster & Gritton, 1986, p. 37-38; Schrum, 1985, p. 45-46; and Du-Babcock, 1986, p. 26-27) conducted a laboratory-controlled study of a college Spanish course. They added suggestive positive atmosphere, music, and synchronization of presentation with students' breathing to the existing course methodology. The thirty-two participants, 16 men and 16 women, had no previous formal training in Spanish and ranged in ages from 19 to 26. Two men and two women participants were assigned randomly to each of the eight treatment cells. The three variables were found individually to affect the acquisition and retention of Spanish words to a significant degree. Further, when all three variables were present, a significant cumulative effect was found; in fact, learning was 2 1/2 times better than when all the variables were absent.

Du-Babcock (1986, 1988) investigated the effectiveness of the Accelerated Learning approach in teaching English as a second language to Southeast Asian and East African adult immigrants from the Refugee Women's Program and the San Francisco Community College Centers. The participants were deemed comparable in language and socioeconomic backgrounds. The total instructional time was 60 hours over an eight-week period. The participants' English proficiency in grammar and job-related English was assessed before and after instruction. Although no control group was available, a local norm group was established for comparison. This norm group consisted of 600 students from the San Francisco Community College Centers where conventional approaches in
teaching English as a second language were used. Students in the local norm group received 180 hours of instruction over 18 weeks. Results of the study revealed that achievement scores of the Suggestopedia groups showed significant gains above those of the local norm group receiving conventional instruction.

After completing training in Suggestopedia from Dr. Lozanov in 1979, Dhority (1991/1994, p. 123) returned to the University of Massachusetts at Boston and implemented a Suggestopedic German course. Through the years, he has taught 17 more German courses and, in each case, has found the results to be very positive. Although no formal design for controlled evaluation was instituted, much evaluative evidence has been gathered. For example, attrition in his courses has been minimal compared with a 25-50 percent attrition rate for other sections of elementary foreign language training, and 90 percent of his students have continued on to German 2 compared with less than 50 percent of students in other beginning foreign language classes.

In addition to the informal research, Dhority (1991/1994) conducted controlled experimentation in German classes using his version of Accelerated Learning methodology at Fort Devens, Massachusetts. The study compared Dhority's Suggestopedic approach with the variant of the standard audio-lingual program designed by the Defense Language Institute which was being used then at Fort Devens. The control group data were gathered from four previous German classes. The language background of this experimental group was typical for that of students in previous German courses. Thirteen military men in the
experimental group received 108 hours of training compared with the control
group’s instruction of 360 hours. Results of the study were positive; 26 percent of
the control group attained a Level 1 or better on a German listening test compared
with 73 percent in the experimental group. On reading tests, 28 percent of the
control group reached a Level 1 or better compared with 64 percent in the
experimental group. This is especially impressive because the experimental group
received less than a third of the hours of instruction received by the control group.

Also testing a beginning German course taught with Accelerated Learning
methodology, Gasner-Roberts and Brislan found similar positive results (cited in:
Schrum, 1985, p. 48; Schuster & Gritton, 1986, p. 43). For random assignment
participant names were drawn from a box. The two control groups were taught
conventionally. Proficiency in German was measured with standard examinations:
mid-year, end-of-year, oral, and objective tests. Analysis of the results confirm
Suggestopedia as the superior teaching method compared with conventional
learning and teaching practices.

In 1991, Air New Zealand International conducted a nine-day German
Language Training Programme using Accelerated Learning methods. Sixteen cabin
crew members received the training over a two-month period. Although not a
formal quantitative study, Mackay (1992, p. 6), an Inflight Services Training
Instructor, reports much success with the program:

Without exception, our participants demonstrate levels of achievement
which we feel would have taken much longer using more traditional
teaching methods. From the very first day... all students were actively involved in speaking German, with obvious enthusiasm and enjoyment. Their motivation continued throughout the programme, which is one of the major benefits of the Accelerated Learning classroom... Students have related many personal experiences where they have had the opportunity to use their new-found language skills with surprising success, on board the aircraft. "I didn't realize I knew the correct words - they just came out!"

All students progressed to the next higher level of German. Mackay (1992, p. 6) concludes, "This was a 'pilot' course, on a trial basis. We are very pleased with the results achieved... Obviously, Accelerated Learning is far more than intense conscious learning, reaching subconscious thought processes as well."

Schuster and Gritton (1986) provide a comprehensive review of 14 research studies applying Suggestopedia methodology to foreign language training. They determined that in nine of these 14 studies the investigators used well-controlled research designs with random assignment and followed the intent, theory, and practice of Suggestopedia. They concluded these nine collective studies show consistently that students can be taught with approximately two to three times greater speed than can controls for a similar amount of language achievement.

**Language Studies That Revealed No Significant Difference**

Not all research on applying Accelerated Learning to language training has produced significant positive results. For example, Caux (1993) investigated the application of Accelerated Learning with a college-level beginning French class.
He compared two approaches: the Rassias method which was practiced in the control group consisting of 17 students and the Accelerated Learning method used with the treatment group of 16 students. "The Rassias method," Caux (1993, p. vii) explains, "is based in large part on the traditional audiolingual method which stresses repetition, practice, and rote memorization." The results, although not significant, pointed in the direction of the hypothesis which stated that students in the Accelerated Learning classroom would reach a higher level of proficiency and a higher level of attitudes than would students in the Rassias classroom.

Zeiss (1984) tested the use of relaxation, music, and synchronized music/phrasing with adults in an English as a Second Language course. The synchronized music with phrasing as a learning technique was introduced originally by Lozanov and is recommended by Ostrander & Schroeder in Superlearning (1979). The study involved 14 Saudi Arabian nationals, between the ages of 18 and 21, enrolled in two sections of a technical vocabulary class at Pueblo Community College. Although the treatment group was viewed as the lower-achieving group due to previous non-technical vocabulary testing, the pretest indicated the treatment group had a mean score slightly higher than the control group. Both classes were taught by the same instructor, and each section had met for approximately five class sessions prior to the commencement of the study. Results of the study revealed the value of using these three techniques was inconclusive. The data indicated no individual effects from relaxation or from relaxation combined with the music treatments. Although the results indicated a
slight improvement in the cumulative effects of the treatment, the difference was not significant.

Bush (1986) compared training effectiveness of three language instructional methods at the Defense Language Institute Foreign Language Center. The three methods were Suggestopedia, a standard methodology used at the center, and a flexible-scheduling version of the standard methodology. The participants were 40 randomly selected, junior enlisted Army and Navy personnel taking a Russian Basic Course. Bush found Suggestopedia neither accelerated the learning nor resulted in more overall positive attitudes in students when compared to either the standard or flexible scheduled groups.

**Non-Language Studies That Produced a Significant Difference**

A sizeable amount of research has been conducted on subject content other than language acquisition and retention. For example, Peterson (1977) investigated Accelerated Learning methodology while teaching two sections of a Navy ROTC class. Pretests of the two sections produced almost identical scores. He taught the Accelerated Learning section in half a class period starting with the fourth week of class. The posttest (the final examination) again provided almost identical scores, showing that the experimental group learned as much as the control group in one-half the time. Absenteeism was reduced greatly in the experimental group, and five persons from the control group who attended the experimental group as a make-up session asked to stay in the experimental group. Peterson (1977, p. 8) says, "On the self-examination quizzes those with the Lozanov background
appeared to have the better understanding of the material. It was almost as if they
had learned the art of learning. They seemed to be full of a sparkle and a desire to
learn."

Vannan (1981) researched Accelerated Learning methodology with an
undergraduate class for elementary education majors, Methods and Materials in
Elementary Science. The control group, which met in the fall, spring, and summer
sessions of 1975 and consisted of 220 students, received 11.3 percent "A" grades
when taught traditionally. In 1976 an experimental group of another 220 students
taking the same course received 78 percent "A" grades. This high achievement
trend continued each year with 76 percent "A" grades for the experimental groups
through 1980. The control group and the experimental group were given the same
examinations, which featured objective-type test items on the first two tests and
objective and essay items on the final exam. Vannan concluded Suggestology was
an effective methodology for teaching this course because it produced higher-than-
average achievement gains for the students. In a letter to Vannan (1981), one of
the students wrote:

When I came to class on Thursday, I was extremely surprised to find the
test was Thursday, --that very same day. Feelings of terror came over me
and also disappointment when I found out that I still had to take the test.
You said Suggestology would be put to its test here, but I personally didn't
think it would help. I was extremely nervous taking the test. Many of the
questions came easy to me, but there were a few that really gave me
trouble. . . I hoped for a high C. Well, to my surprise I did great - 96.4 - second highest in the class. I couldn't believe my eyes. I guess you were right, suggestology really helped me do super on the test. (p. 134)

Stein, Hardy, and Totten (1982) tested the use of music and imagery with library science master's-level classes at North Texas State University. Seventy-five students received one of three treatments: music plus imagery, music only, or no treatment. A vocabulary list was the pretest and posttest. The results identified a significant difference for the music-only group over the control group. A one-week delayed vocabulary test revealed a significant difference for each of the two experimental groups over the control group. This result suggests using multiple channels of input may enhance long-term retention even when it appears to have little effect on short-term retention.

Likewise, Johnson (1982) found positive results when using group relaxation exercises with second- and sixth-grade students in spelling class. A pretest was used to determine which students were "poor" spellers and which were "good" spellers. Results showed that second-grade students initially identified as "poor" students showed significantly more spelling improvement with relaxation than did students initially identified as "good" spellers. For sixth-grade students, relaxation training was found to be effective in improving spelling achievement for both the "poor" and "good" spellers.

In 1992, Questad studied reading scores of ten disabled, middle-school students who received four different types of learning methodology, one of which
was Accelerated Learning. In this case study, Questad found that nine of the ten students had their highest gains under Accelerated Learning. Also, the average reading gain of students receiving Accelerated Learning instruction was greater than the average reading gain of students in any of the other three methods. She also found the average reading gain of the Accelerated Learning group was three times greater than the average yearly gain of the school district's entire population of learning-disabled students.

Shrum (1985) investigated the use of Accelerated Learning methodology with incarcerated male adults learning basic arithmetic. He used a randomized, pretest-posttest, control group design. The research was replicated three times with a total of 72 participants. No significant differences were found in the pretest means. The control group was taught using a traditional "review of yesterday's material, lecture on today's new material, and give examples on the blackboard" methodology. At the conclusion of the six-week treatment phase, Shrum found the Accelerated Learning group performed significantly better than the control group on the posttest. The same posttest was again administered two weeks later to check for retention, and again Shrum found the accelerated group performed significantly better than the control group.

One of the most comprehensive studies on the efficacy of Accelerated Learning was conducted by the Paradise School District in 1983 (cited in: Questad, 1992, p. 20-21; Schrum, 1985, p. 49-50; Schuster & Gritton, 1986, p. 48-49). Twenty teachers instructed 538 students in experimental groups using
Accelerated Learning methods and twelve teachers instructed 517 students in control groups using unspecified conventional methods. The students were in grades two through six and ranged in ability from learning-disabled to gifted and talented. Results on the posttest, the California Achievement Test, revealed the students in the experimental group averaged a significantly higher gain (46.9) than the students in the control group (33.4). Also evident was a significant reduction in behavior problem referrals from the experimental sections compared with the control sections. Similar results of higher gain in achievement scores and fewer behavior problems for the experimental group were evidenced at the end of the second year. The independent firm which administered the evaluation concluded that accelerative learning applications have the potential to improve dramatically the quality of education.

Moon, Render, Dillow, and Pendley (1986) provide a meta-analysis of forty research studies using one or more components of Accelerated Learning. Fourteen of the studies contained sufficient statistics to compute effect sizes. All fourteen studies used a control group as the reference for comparing various Suggestology methods. The overall performance of subjects under Suggestology was three-quarters of a standard deviation higher than the average performance of subjects under control conditions. Moon et al. (1986) also found:

- subjects under the suggestion treatment performed .75 standard deviation higher than control subjects in well-controlled studies of affective attribute, but only .43 standard deviation better in poorly-controlled studies, on the
average. Subjects under the suggestion condition performed over 1 standard deviation higher than control condition subjects in well-controlled studies of cognitive capabilities, but only .35 standard deviation better in poorly-controlled studies, on the average. (p. 6)

The results of this study may be biased, Moon et al. (1986) state, because all reports came from a single journal, the Journal of Suggestive-Accelerative Learning and Teaching, which may be influenced by publication bias. He also stresses, however, that 10 of the 53 effect sizes were zero or negative.

Schuster and Gritton (1986) also reviewed approximately 20 non-language studies but did not qualify the studies based on research design. They concluded that Suggestopedia worked well in accelerating the learning of many school subjects and also provided a favorable influence on increasing the creativity of students in the process.

**Non-Language Studies That Revealed No Significant Difference**

Other non-language studies, however, do not provide significant positive results about Accelerated Learning. For example, Render, Hull, and Moon (1984) found no significant results when they used guided relaxation and Baroque music with a college-level Foundations of Learning class. One section was exposed to music during the administration of the test, a second section was exposed to a 10-minute guided relaxation experience immediately prior to a test, a third section was exposed to a combination of music during the test and guided relaxation prior to the test, and a fourth section was exposed to neither relaxation nor music. All four
sections were taught by the same instructor and were tested on the same day. Four tests were given during the semester. Results indicated the use of music during testing, the use of relaxation prior to testing, and the combination of music and relaxation had no significant effect on students' test performance.

Portes, Best, Sandhu, and Cuestas (1992) tested the effects of relaxation and music with 82 undergraduate students in educational psychology and mathematics classes. When the treatment groups were compared with the control groups which received a lecture class format, no significant difference in performance was revealed.

Eastman (1990) investigated the effects of music and imagery on learning and attitudes in an industry training class. Her participants were 146 clerical employees receiving training on tax reporting. Eastman used eight different groups. Two groups each were provided with one of four conditions: music only, imagery only, both music and imagery, and control. Each class lasted approximately 1 1/2 to 2 hours, of which no more than 50 minutes were devoted to the presentation. Prior to conducting the sessions, the instructor received eight hours of training on using music and imagery in a training program. The class videotapes revealed that the music and imagery methods were used correctly and consistently within the sessions. There were no significant differences among groups on demographic information or on pretest means. There also were no significant differences in the posttest for any of the variables.
Critique of Research Studies

Although Dr. Lozanov did a number of experiments on Suggestology, replication of these experiments is difficult because aspects of his methodology are missing. In many cases we do not know, for example, the demographics of his participants or the process used to select subjects. We also do not know the purpose of the foreign language training. Was it part of intelligence agent training during the cold war, and were there incentives/disincentives for achievement.

"During a speech at an Accelerated Learning conference in Seattle (1991), Lozanov evaded all questions related to the specifics of his work with the statement that his government has considered his work 'secret' and only what he has published (and had reviewed by his government) is for public information" (Questad, 1992, p. 23).

In addition to Lozanov's research, 19 individual research studies and three meta-analysis studies were reviewed in this chapter. One of the meta-analysis studies examined 20 separate studies, and two examined 14 studies each.

Upon a thorough review of previous research studies including the research design and the findings, the researcher has these concerns:

Many research studies reviewed in this chapter suffer from small sample size. It was not unusual for the number of participants to range from 15 to 20.

In some cases, the same instructor delivered Accelerated Learning sessions in the morning and the control group sessions in the afternoon. This research design begs the question, can an instructor "turn on and turn off" Accelerated Learning methodology, especially the use of suggestion and positive attitude?
On the other hand, some research studies used different instructors for the control group and the experimental group. Were the two (or more) instructors equally skilled, inspired, and objective (causing no Hawthorne effect)? Also, were the teaching materials comparable for both groups?

The methods used in the control group were not always clear. It is difficult to evaluate the efficacy of Accelerated Learning without specific information about the comparison methodology. Often, words such as traditional and conventional were used to describe the control group treatment with no further explanation.

Some studies did not use a control group, and pretests were not used consistently to determine baseline information. In some cases, the lack of participant demographic information raised concerns about selection bias.

Some of the studies used very short treatment times. In one study, for example, a one-time presentation of 1 to 2 hours was the entire treatment time. In another study, the treatment was used only during test administration—one-hour tests four times during the semester. The latter study also raises questions about the appropriateness and the professional ethics of introducing Accelerated Learning techniques only during a testing situation when students are not familiar with these techniques during the remainder of the semester.

In one study, a teacher/student ratio of 1:27 for the experimental group was compared with a ratio of 1:43 for the control group. These two groups do not seem to be comparable, yet this inequity was not addressed.
In another study, the experimental treatment did not start until the fifth session of class, and in another study it started in the fourth week of class. Were these designs disruptive to the classes; and, if so, did the disruption influence the results?

Notwithstanding the above-identified concerns, the researcher acknowledges many positive design aspects of the reviewed research. For example, one of the studies in which Accelerated Learning produced a significant difference was conducted in a laboratory setting.

The instruction time for a number of studies was quite lengthy, many ranging from several weeks to several hundred hours.

One study was replicated three times as part of the initial research. Another study, which surveyed fall, spring, and summer college sessions, was replicated during all three sessions for five full years after the initial year.

More than one study included 100 participants or more, and one study involved more than 500 participants.

Conclusions of the research critique. The findings of the research reviewed were mixed, some producing a significant difference and some not producing such a difference. This researcher believes that some of the inconsistency in the results can be attributed to the large number of concerns in the design of the research. As Schuster & Gritton (1986) and Moon et al. (1986) found, when only well-controlled studies were analyzed, the results consistently were positive. They were positive in either significantly increasing the amount of
learning, in decreasing the number of instructional hours required for a certain level of learning, or a combination of the two.

The Use of Accelerated Learning in Business and Industry Today

Suggestopedia, more commonly called Accelerated Learning today, became popular in the United States in the 1970's especially in academic settings. Although the introduction of Accelerated Learning to business and industry is not documented, it is believed to have occurred through the broad marketing of Superlearning self-study tapes.

Superlearning, a version of Suggestopedia, was first introduced by two American researchers, Ostrander and Schroeder (1979, 1994), in 1979 after they studied directly under Lozanov in Bulgaria. Superlearning includes many elements of Suggestopedia, however, Superlearning places a stronger emphasis on the correct rhythmical presentation. "All of the materials spoken are precisely timed on an 8-second cycle so breathing will naturally fall into a rhythmic pattern of: hold 4; out 2; in 2" (Felix, 1992, p. 69). Students receive coaching on the breathing procedure and then hear small chunks of words and hold them during the four-second intervals. This synchronization of breathing and presentation of words during the passive concert session is unique to Superlearning.

Another difference introduced by Superlearning is its self-study format on audio tapes. This self-instructional method naturally removes the instructor and his/her presence of authority from the learning environment.
In 1981, David Meier, a specialist in applying instructional methodology to business training, founded the Center for Accelerated Learning in Lake Geneva, Wisconsin. Since that time, Accelerated Learning, in whole or in part, has been used in training programs in some organizations across the country. Other organizations, however, have remained unfamiliar with it.

**Accelerated Learning Has New Meanings**

Although many organizations have been using Accelerated Learning concepts for years, there appears to this researcher to be some confusion about what Accelerated Learning really is. It seems the concept of Accelerated Learning is used loosely and at random, and it's impossible to know which (or how many) elements of the original Suggestopedia are included in a program titled Accelerated Learning. McKeon (1995, p. 65) states "A major premise of Accelerated Learning is that learning must be collaborative. Accelerated Learning treats the acquisition of knowledge as a collaborative effort of equals—trainers and trainees. Trainees tend to feel less pressure to learn when they're in partnership with the trainer and when the responsibility for learning is shared." This collaborative concept also is expressed by Gill and Meier (1989, p. 63), "Accelerated learning . . . methods are interactive and treat learning as a collaborative effort of equals, rather than a hierarchical relationship between teacher and pupil."

This collaboration and concept of partnership is different from Suggestopedia. Although Lozanov emphasized student involvement in the practice portion of the lesson, he believed the students should remain relatively passive and
submissive. Sensing ambiguity about Accelerated Learning usage in organizations today, this researcher contacted five senior training people in major organizations to gather first-hand reports. Their stories follow.

**Sun Microsystems.** Kathleen Barclay is director of world-wide field training for Sun Microsystems, Mountain View, California. Barclay (personal communication, February 20, 1996) has used Accelerated Learning methodology with engineers. She is a firm believer in the Accelerated Learning process when its principles are used in a constructive manner. Accelerated Learning works best, she stresses, when trainers know why they are doing certain activities.

For a new product introduction, they did a two day train-the-trainer session for 12 people who each went out and trained 40 other people. These 40 people then trained the field people. This was the most expedient training they had ever delivered. Even though over 1200 people were trained in four weeks, the feedback was, "this is the best training we've ever had!" The original two-day train-the-trainer session would have taken twice as long using any other method. They did not have pretests or control groups. Their data are, as in most corporate situations, anecdotal. Since then, Barclay has used Accelerated Learning in bits and pieces as it seems to fit the audience. She usually uses imagery, participative learning, and mind mapping. Barclay says, "Accelerated Learning can be life changing. Learning about Accelerated Learning is part of it, but practicing it--that's when it really makes sense!"
American Family Insurance. Ellen Leible, trainer for American Family Insurance, Madison, Wisconsin, is such a believer in Accelerated Learning that she uses some of the techniques in every class she teaches. Leible (personal communication, February 27, 1996) tries to involve all the senses--music, lots of color, candy, scented markers--and calls it whole brain learning. Ellen claims she can feel a difference in the energy level when music is used. The learners create mind maps--which usually start out quite left brain, but later they're improved with more right-brain thinking. She encourages people to have fun, collaborate, eat lots of candy, and make mistakes! She says some of the insurance claim adjusters are stuffy at first, but by the second day, they've loosened up. She dims the lights at the end of every day when she does a passive review.

Ellen says anything that gives the class a smorgasbord approach to learning can be called Accelerated Learning. The evaluations always come out great! She usually uses a Reaction evaluation (level one) and a six-week delayed cognitive Learning evaluation (level two).

Florida Community College. Bunny Howard has been using Accelerated Learning for three years at Florida Community College in Jacksonville, Florida. "The students love it--they always stay late and the evaluations are great. They complain about other teachers not using Accelerated Learning," reports Howard (personal communication, February 21, 1996). Since their average student is 33 years old, Howard says they have lots of deprogramming to do about negative experience with previous education. She uses almost constant review and calls the
concert review a lessons-learned summary. Howard is quite flexible in her definition of Accelerated Learning and says any alternative learning (something other than lecture) is Accelerated Learning.

**American Express.** Richard Coco (personal communication, February 23, 1996) with American Express in Ft. Lauderdale, Florida, has used Accelerated Learning in several classes including new-hire training classes. With their initial implementation of Accelerated Learning, they used a control group and a test group and found that quality and productivity increased more with the Accelerated Learning group. They also found improvement in the participant Reaction evaluation compared with previous evaluations.

Coco says a session is using Accelerated Learning when it stimulates as many senses as possible and is holistic in nature. In our conversation, Coco seemed to especially stress the importance of concert review.

**3M Company.** Arlan Tietel, training manager with 3M in St. Paul, Minnesota, thinks Accelerated Learning works well not only in the classroom but also in work style. He tries, for example, to make meetings fun, to use mind maps, and to provide color, music, and candy. Arlan says a training session is Accelerated Learning when it is whole-brain learning.

In talking with the above trainers, the researcher asked if there were situations when Accelerated Learning should not be used? Howard says it's best to ease students into it rather than overwhelm them with everything at the beginning. She also stresses that using Accelerated Learning techniques can be intimidating to
other teachers. However, she also stressed other teachers may be more likely to
start using Accelerated Learning techniques if they are introduced to them slowly.

Coco, when asked about situations in which not to use Accelerated
Learning, replied the trainer needs to know his/her audience. Perhaps in executive
management development, a trainer should use a back-door approach and have
heavy participant involvement before introducing the games and toys.

Barclay stressed that as long as the trainer is comfortable with it, s/he could
use Accelerated Learning methodology. She emphasized the importance of trainers
knowing the theory and rationale behind Accelerated Learning so they know when
and how to use the specific techniques.

Although pure Suggestopedia is probably not being used in very many, if
any, business and industry training programs today, there is no question that
Accelerated Learning is being used somewhat extensively. And there appears to
be a renewed interest in Accelerated Learning methodology among training and
development professionals. Two programs were offered and attended widely by
the Central Iowa Chapter of ASTD (American Society for Training and
Development) within the last year. In 1995 both major national publications for
professionals in the training and development field, *Training Magazine* (October
issue) and ASTD's *Training and Development* (June issue), published articles about
Accelerated Learning. Also, ASTD reprinted in 1994 their Info-Line publication
entitled *Basics of Accelerated Learning*. 

International Alliance for Learning. The Society for Accelerated Learning and Training has been renamed the International Alliance for Learning (I.A.L.), but its mission is still to improve the quality of education. An I.A.L. Newsletter (Vol. 19, Autumn, 1994) cites this name change and explains,

We continue to support the use of music, relaxation and suggestion in the classroom, and are also actively involved in examining new theories about the brain, learning styles and environment. The new focus is on alliance: international experts joining together to share research and cutting-edge teaching and learning techniques . . . we will continue our advocacy of brain compatible, learner centered and researched-based teaching and learning strategies . . . we will remember our founding inspiration Dr. Georgi Lozanov and the small group of visionaries who began to revolutionize education 20 years ago. (p. 1)

I.A.L. President Bobbi DePorter who studied with Lozanov in the 1970's, says, "In the beginning we were very strict. We brought in carpenters to build chairs at the exact angle of Lozanov's chairs, bought the same music, copied his approach exactly" (cited in Zemke, 1995, p. 96). But she contends that Accelerated Learning today encompasses much more than Suggestology and at conferences, "there is a large contingent of neurolinguistic programming . . . educational kinesiology and brain research. All of these things came after Suggestology. They influence learning practices and are now part of what we think of as Accelerated Learning" (cited in Zemke, p. 98).
I.A.L. states the definition of Accelerated Learning as simply "a rich potpourri of innovative ideas and experiences" (Zemke, 1995, p.98). DePorter is not concerned with the vague definition of Accelerated Learning, "Accelerated Learning has gotten to be a very loose term. However anybody is describing affective, effective learning that makes a difference, that is positive--accelerative learning encompasses it. What Dr. Lozanov taught is still at the core; the principles of rapport, music, environment are all there. All the rest have spiraled out from that core" (cited in Zemke, p. 100).

I.A.L. members, according to their 1996 annual conference brochure, represent business and educational organizations in the U. S. and dozens of countries worldwide.

Center for Accelerated Learning. David Meier, Founder of the Center for Accelerated Learning, isn't so sure the Lozanov connection is all that important, "I think Lozanov provided romance and momentum for the act of questioning present notions of the day about learning . . . Until the 70's, education and training were under the tutelage of a post-Gutenberg, rationalistic, digital approach to learning, life, science--everything. The lecture method was a creation of the Dark Ages" (cited in Zemke, 1995, p. 100). Meier notes that learning was much more holistic in earlier ages, "Tribal people all the way up to Homer used rhythm, rhyme, music and chanting to teach. Homer was a rap artist . . . Descartes . . . rational Descartes--disembodied intellect from the whole person. What Accelerated
Learning does . . . is reintroduce the somatic element and make learning a whole-person endeavor again" (cited in Zemke, 1995, p. 100).

The Center for Accelerated Learning has prepared more corporate training professionals in Accelerated Learning than any other organization worldwide. David Meier, the Director of the Center, is viewed as the country's expert on implementing Accelerated Learning in business and industry training programs. Meier's (personal communication, April 5, 1996) definition of Accelerated Learning is similar to DePorter's definition, "Accelerated Learning is a natural learning state where learners are using all their senses and being totally present. It accommodates various learning styles and is measured by results achieved." He continues, "Accelerated Learning is not a prescribed system for a highly structured sequence of events. There are many systems and yet there is no set system. Suggestology is part of it; all the new brain research results are part of it."

Meier believes the results achieved are more important than the methods used, which is a cultural shift for us since we are used to standardizing and compartmentalizing and having order rather than chaos. He says the lecture method isn't necessarily bad. There may be times when it may be the most effective method, but it should not just be empty rhetoric, but should be done with drama, human psychology, and theatrics in mind. He stresses the need for more collaboration and cooperation among learners; that's where learning and results really happen.
In summary, Meier sees Accelerated Learning as the Trojan Horse—it brings fresh energy into the organization and the people there. People can be more creative about their lives; they can rediscover themselves.

Summary

In this chapter the related literature and research were reviewed. The theoretical foundations of Accelerated Learning were traced to Dr. Georgi Lozanov and his founding of Suggestology and Suggestopedia. Dr. Donald Schuster is credited with popularizing Suggestology in the United States through publication of his extensive research studies. His version is known as Suggestive-Accelerative Learning Techniques (SALT). Another version, Superlearning, was developed by Ostrander and Schroeder also in the '70's. The terms Suggestopedia, SALT, Superlearning, Integrative, and Enhanced Learning are sometimes used interchangeably although there are differences among them.

Nineteen individual research studies and three meta-analysis studies were reviewed in this chapter. One of the meta-analysis studied examined 20 separate studies and two examined 14 studies each. The results of the research were mixed. However, when only well-controlled studies were analyzed, the results consistently were positive.

Accelerated Learning is used in part or in whole by many business and industry training programs across the country. The term Accelerated Learning is, however, used loosely and randomly to describe almost any type of whole-brain,
learner-centered training program. The techniques seem to work, but getting a grip on the theoretical foundations is more elusive; you may feel as though there is, in fact, no such thing as an accelerated-learning theory (Zemke, 1995, p. 96).

The Society for Accelerated Learning and Training has been renamed the International Alliance for Learning, and its definition of Accelerated Learning is a rich potpourri of innovative ideas and experiences. The Accelerated Learning of today has evolved dramatically from Suggestopedia, and it will continue to evolve as we learn more about how we learn.

While this chapter presented the foundations and current usage of Accelerated Learning, the next chapter describes the methods and procedures used in this research project to test the effectiveness of Accelerated Learning in a corporate employee training situation.
3. THE PRESENT STUDY--METHODS AND PROCEDURES

Problem Under Investigation

The purpose of the study was to determine the effectiveness of Accelerated Learning methods when compared with the effectiveness of the same course taught using traditional training methods.

The research question can be stated as: Does the training program involving Accelerated Learning significantly improve the employee's job knowledge, skills, and performance when compared with traditional training methods? More specifically, the researcher wanted to know if the experimental group (those who participate in the training program which has been enhanced with Accelerated Learning) would perform at a significantly higher level ($p < .05$) on measures of job knowledge, computer skill, customer service skill, and actual on-the-job performance than the control group (those persons who participate in the training program which is delivered using traditional training methods) would perform on the same measures.

Research Hypotheses

To investigate the research problem, four hypotheses were identified:

Research Hypothesis 1. The participants in the experimental group will perform at a significantly higher level ($p < .05$) on a cognitive test of job knowledge than the control group.
Research Hypothesis 2. The experimental group will perform at a significantly higher level (p ≤ .05) on a skill test of computer usage than the participants in the control group.

Research Hypothesis 3. The participants in the experimental group will perform at a significantly higher level (p ≤ .05) on a skill test of telephone customer service than the participants in the control group.

Research Hypothesis 4. Four weeks after training, the participants of the experimental group will perform at a significantly higher level (p ≤ .05) on three electronically generated performance scores than the participants in the control group.

Design of the Study

The experimental research design used in this study was a preexperimental design called static group comparison (Ary, Jacobs, Razavieh, 1990, p. 323-324). The design used a posttest with control and experimental groups.

The researcher and The Financial Center management developed four measurement instruments—one to gather data for each of the four hypotheses. The instruments were analyzed for proper test construction; they were also piloted with the most recent graduating class of the training program. All four measurements were subsequently revised.

Three classes that completed training during November and December 1995 constituted the control group. The experimental group consisted of three classes
that completed training in January and February 1996. The four measurements, given in the form of posttests, were administered to the control group and the experimental group. The training did not lend itself to a pretest because the learners have no way of knowing the information prior to the training. It was deemed that participants would do very poorly on the job-specific pretests unless they had worked previously at The Financial Center in this same position. For example, in the computer skills test, the participants would not have been able to turn the computer system on and get into the programs without any training. On the remaining tests, all of which were technical, a new employee would become extremely distraught not knowing any of the answers.

Variables

The independent variable, sometimes called the treatment variable, is a factor being controlled, manipulated, or changed by the researcher. For purposes of this study, the distinction between the two learning strategies used, the Accelerated Learning method and the traditional training method, is the primary independent variable.

The dependent variable is a measurement of an outcome or effect of manipulating or changing the independent variable. In this study, the dependent variables are the participant's level of job knowledge, skills, and performance.
Participants

The research participants were employees of The Financial Center located in a midwestern city and were in a required 64-hour (eight-day) new employee training class. The position for which the participants were training involved telephone customer service skills performed simultaneously with computer data entry skills.

Participants were placed in one of the classes based on their date of hire. All new hires for this position were in these classes; there was no process to randomly select only some of the new hires to be participants.

Informed Consent

All participants, including those involved in the pilot study of the instruments, were involved in the "Informed Consent" process. During class, a written statement was distributed, read, and explained. The information included the purpose of the study, the voluntary nature of the study, and the researcher's address and telephone number. Questions and concerns were encouraged during the meeting. Participants were encouraged to contact the researcher at a later date privately and confidentially if they did not wish to make a statement during the meeting. Several participants raised questions during the meetings. No participants contacted the researcher after the meeting.

Participants were promised confidentiality by being assigned an unidentifiable code number. Only the researcher can match participant code numbers with names.
The Iowa State University Committee on the use of Human Subjects reviewed this research application and determined that informed consent was being obtained within their guidelines. The Informed Consent statement in Appendix A has been altered slightly to ensure organizational confidentiality. See Appendix B for the approval page of the Human Subjects form.

Facilitation of the Training Program

Facilitator

All training sessions were facilitated by The Financial Center's Senior Trainer. This Senior Trainer, although experienced with traditional training methods, had received minimal exposure to Accelerated Learning methodology until after the three classes within the control group had been tested. The researcher taught the Senior Trainer the concepts and principles of Accelerated Learning, and together they redesigned the 64-hour training program using Accelerated Learning methodology. Approximately five weeks was spent incorporating Accelerated Learning into the training program. The revision time between the control group and the experimental group was designed consciously so minimal contamination could occur between the two training methodologies.

Training Content

The content of the training sessions for the control groups and the experimental groups was identical. The content consisted of technical information on, for example, computer usage, operational terminology, and legal credit
procedures. It also consisted of general information on good telephone customer service skills, such as how to transfer a call, empathize with the customer, and bring the call to a close while also getting a promise to pay.

**Facilitation of the Control Group**

The traditional training program was methodologically sound using an effective training design. It involved learners in hands-on activities, case problems, and role plays. Lectureettes were no more than 20-30 minutes in length. The facilitator built good rapport with the learners with her warm and inviting personality and by sharing small talk and food.

**Facilitation of the Experimental Group**

The experimental group received training using Accelerated Learning methods. Sessions were designed using a modified version of SALT (Suggestive Accelerative Learning Techniques).

The following explanation of the Accelerated Learning processes used with the experimental group is organized into subgroups of environment, preparation phase, presentation phase, and practice phase.

**Environment.** Several changes were made in the training room to accommodate Accelerated Learning methodologies. The tables (each of which contained two learner stations) were stocked with colored paper, crayons, scented markers, and colored pencils. The walls were covered with colorful posters of important information, for example, computer keys to use to perform specific operations. Some of these posters were referred to during the training, and others
were not referred to but were used for subconscious (peripheral) learning. A large, colorful mind map explaining Accelerated Learning was on the wall. (A mind map is a grouping of pictures and words showing the relationship of key concepts to the subject being explained.) The room was rearranged to make better use of a white board, and a flip chart holder was attached to the wall. Two candy dishes were placed in the room.

After a brief introduction to Accelerated Learning, the facilitator explained who she was by displaying a mind map about herself. Learners then prepared mind maps about themselves and presented them to the group as their introductions. Baroque music, by composers such as Albinoni, Vivaldi, and Bach, played throughout the session.

**Preparation Phase.** Learners were invited to get centered on training by participating in a few minutes of stretching and bending physical exercises, followed by a short mental relaxation time. This was sometimes followed by a suggestive set-up, which is a mental imaging time when learners recall a prior pleasant learning experience.

**Presentation Phase.** This phase commenced with a relatively thorough review of the previous session, and was followed by a global over-view of the upcoming session. The dynamic presentation used props, such as mnemonic devices; audio-visual aids, such as a short segment of a video; and most of all, a lively, involved, almost-theatrical voice from the facilitator. The session content was covered through lecturettes (15-20 minutes) and class discussions. Classical
music, by composers such as Beethoven and Haydn, usually replaced Baroque music during this segment. This phase ended with a thorough review of the content. During this review, called a passive review, learners were invited to sit back, close their eyes, and let the information "sink in" while Baroque music played.

**Practice Phase.** During this phase learners practiced the information they had just acquired through, for example, hands-on computer experience, a Bingo game on consumer credit law, preparing posters or mind maps of the content just learned, and a Go-Fish game on the computer action codes.

**Data Gathering Procedures**

The same measurements were used with the three classes in the Control Group and the three classes in the Experimental Group. All instruments were administered by the researcher using the same verbal instructions.

The instruments were administered in the training room or in the Learning Bank, which is a department where all new graduates from the training program commence their new positions. The Learning Bank provides more support and coaching than other departments. New employees stay in the Learning Bank several weeks.

**Participant Background Information Sheet**

Participants were asked to complete a Participant Background Information Sheet. This form gathered information on gender, age, education, computer
experience, customer service experience, and any away-from-work classes, computer experience, or customer service experience the participant currently was involved in. See Appendix C for a copy of the Participant Background Information form.

**Cognitive Test of Knowledge (Measurement #1)**

This evaluation was a cognitive, paper-and-pencil measurement of job knowledge involving a variety of types of questions such as matching, fill in the blank, and true-false. The purpose of the measurement was to answer the questions: Can the participant recall information from class? Did learning occur?

The measurement consisted of 9 groups of questions that formed 9 subscores. The subscore of question 1, for example, consisted of the scores of la, lb, lc, ld, and le. The subscore of question 2 consisted of the scores of 2a, 2b, 2c, 2d, 2e, 2f. In total, there were 61 questions on the measurement that were grouped into nine subscores. Each of the 61 questions was worth one point. See Appendix E for a copy of Measurement 1. There was no time limit for completion of the measurement which provided data for research hypothesis 1.

**Computer Skills Test (Measurement #2)**

This evaluation was a job simulation that required specific computer skills. While viewing customer accounts on the computer screen, participants answered questions that were typical of live customer calls. This evaluation answered the questions: Did the participant learn the necessary computer skills, and can s/he transfer them to a job simulation?
In order to complete the evaluation, participants needed to know, for example, which screen to go to for certain information, how to access those screens, how to toggle between two mainframe systems, and how to cut-and-paste information. The test consisted of two subscores. Part A required viewing a particular customer’s account and answering questions 1 through 19, and Part B required viewing a different customer’s account and answering questions 20-34. See Appendix F for a copy of Measurement # 2.

The participants were given a maximum of 15 minutes to complete the simulation. Each question was worth two points for a maximum possible score of 68 points. This measurement provided data for research hypothesis 2.

**Customer Service Skills Test (Measurement # 3)**

This evaluation was a job simulation involving telephone customer service skills. While viewing a customer account on the screen, participants talked with a simulated customer on the telephone. The simulated customer, another trainer with The Financial Center, evaluated the participants’ telephone customer service skills on 14 items. Examples of these 14 items include: greeting the answerer pleasantly, identifying self by name and company, and verifying whether the answerer is cardholder or authorized user. See Appendix G for a copy of Measurement # 3. The participants did not know this trainer, and the trainer did not know the participants. The researcher talked with the trainer about ensuring consistency and objectivity in the ratings. Each of the 14 items on the measurement was worth 5 points, for a maximum possible score of 70. This
evaluation answered the questions: Did the participant learn the necessary
customer service skills, and can s/he transfer them to the job simulation? This
measurement, which took approximately 4 to 5 minutes to complete, provided data
for research hypothesis 3.

**On-the-Job Performance Measures (Measurement # 4)**

Measurement # 4 was not completed by the participant. Rather, it was an
evaluation of actual on-the-job performance gathered one month after the end of
training. The Financial Center tracks employee performance electronically on a
weekly "Effectiveness Report." This standard Company report was used to gather
three pieces of performance data for each participant: the average number of
phone calls per hour to a cardholder or other authorized user; the percent of those
cardholders who promised to pay; and the percent of the people who promised to
pay who actually did pay at least 50 percent of the amount promised. See
Appendix H for a copy of the form used to record these data from The Financial
Center Report. The evaluation answered the question: Is the training affecting the
bottom line? This measurement provided data for research hypothesis 4.

The cognitive test, the computer skills test, and the customer service test
were administered to the new employees upon graduation from the training
program. The on-the-job measures were completed by the researcher with
computerized data provided by management of The Financial Center one month
after the end of the training program.
Please note the measurement forms in the Appendixes have been altered slightly to ensure anonymity to The Financial Center.

**Content Validity of Measurements**

Validity is the extent to which an instrument measures what one thinks it is measuring (Ary, Jacobs, Razavieh, 1990, p. 256). The four evaluations designed for this research project were determined to be content valid by The Financial Center's management. It is believed these four evaluations adequately measured the content areas of this training program within this organization.

Content validity is not expressed in numerical form. Rather, it is a judgement made by experts in the content area, which in this case was the management from The Financial Center.

**Statistical Calculations of the Data**

See Chapter 4, Research Findings, for a complete description of the statistics calculated on the data. These calculations included frequencies, reliability tests, t-tests of two means, and ANOVAs, as well as descriptive statistics.
The purpose of the study was to determine the effectiveness of Accelerated Learning methods when compared with the effectiveness of the same course taught using traditional training methods. In particular, the researcher wanted to know whether the training program involving Accelerated Learning (used with the experimental group) significantly improved the employee's job knowledge, skills, and on-the-job performance when compared with traditional training methods (used with the control group).

The research hypotheses tested in this study were stated as:

Research hypothesis 1. The participants in the experimental group will perform at a significantly higher level ($p < .05$) on a cognitive test of job knowledge than the participants in the control group.

Research hypothesis 2. The participants in the experimental group will perform at a significantly higher level ($p < .05$) on a skill test of computer usage than the participants in the control group.

Research hypothesis 3. The participants in the experimental group will perform at a significantly higher level ($p < .05$) on a skill test of telephone customer service than the participants in the control group.

Research hypothesis 4. Four weeks after training, the participants in the experimental group will perform at a significantly higher level ($p < .05$) on three on-the-job performance scores than the participants in the control group.
Number of Participants

The control group consisted of three classes that completed the training during November and December 1995. The experimental group was composed of three classes that completed the training during January and February 1996. Table 1 illustrates the number of participants in each of the classes who completed training and who were on the job one month later.

Table 1: Number of Participants

<table>
<thead>
<tr>
<th>Training Dates</th>
<th>No. of Participants Completing Training</th>
<th>No. of Participants on the Job One Month Later</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Group</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10/30/95 - 11/09/95</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>11/13/95 - 11/24/95</td>
<td>11</td>
<td>10</td>
</tr>
<tr>
<td>11/27/95 - 12/07/95</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Control Group Total</td>
<td>26</td>
<td>25</td>
</tr>
<tr>
<td>Experimental Group</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01/15/96 - 01/25/96</td>
<td>12</td>
<td>9</td>
</tr>
<tr>
<td>01/29/96 - 02/08/96</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>02/19/96 - 02/29/96</td>
<td>14</td>
<td>13</td>
</tr>
<tr>
<td>Experimental Group Total</td>
<td>36</td>
<td>32</td>
</tr>
<tr>
<td>Total Participants</td>
<td>62</td>
<td>57</td>
</tr>
</tbody>
</table>
As Table 1 presents, the control group consisted of 26 participants at the end of the training session when data were gathered with Measurements # 1, # 2, and # 3. These Measurements evaluated cognitive and skill learning. The control group consisted of 25 participants one month after the end of training when data were collected for Measurement # 4, which deals with on-the-job performance. One participant discontinued employment prior to being on the job for one month.

The experimental group consisted of 36 participants at the end of training when data were collected with Measurements # 1, # 2, and # 3. Thirty-two participants were on the job one month after the training when data were collected for Measurement # 4. Four participants in the experimental group were no longer employed one month after the end of training.

**Demographics**

Demographic data about the participants were gathered through the use of the Participant Background Information form. Demographic information included, for example, age, gender, previous computer and customer service experience, and education. See Appendix C for a copy of the Participant Background Information form.

Table 2 illustrates the demographic information of the control group, the experimental group, and the combined groups. And Appendix D is a complete listing of participant comments to the two open ended questions: (1) Are you currently gaining computer experience anywhere other than in this employment
Table 2: Demographics of the Groups

<table>
<thead>
<tr>
<th></th>
<th>Control Group</th>
<th>Experimental Group</th>
<th>Combined Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Male</td>
<td>19</td>
<td>17</td>
<td>18</td>
</tr>
<tr>
<td>% Female</td>
<td>81</td>
<td>83</td>
<td>82</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>29</td>
<td>24</td>
<td>26</td>
</tr>
<tr>
<td>Range</td>
<td>18-47</td>
<td>17-55</td>
<td>17-55</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% High School Graduate</td>
<td>42</td>
<td>36</td>
<td>39</td>
</tr>
<tr>
<td>% Some College</td>
<td>58</td>
<td>64</td>
<td>61</td>
</tr>
<tr>
<td>Concurrent Enrollment in other classes Elsewhere</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Yes</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>% No</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Prior Computer Experience</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Less than 6 Months</td>
<td>31</td>
<td>22</td>
<td>26</td>
</tr>
<tr>
<td>% 6 Months or More</td>
<td>69</td>
<td>78</td>
<td>74</td>
</tr>
<tr>
<td>Concurrent Computer Experience Elsewhere</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Yes</td>
<td>15</td>
<td>17</td>
<td>16</td>
</tr>
<tr>
<td>% No</td>
<td>85</td>
<td>83</td>
<td>84</td>
</tr>
<tr>
<td>Previous Customer Service Experience</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Less than 6 Months</td>
<td>15</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>% 6 Months or More</td>
<td>85</td>
<td>94</td>
<td>90</td>
</tr>
<tr>
<td>Concurrent Customer Service Experience Elsewhere</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Yes</td>
<td>23</td>
<td>8</td>
<td>15</td>
</tr>
<tr>
<td>% No</td>
<td>77</td>
<td>92</td>
<td>85</td>
</tr>
</tbody>
</table>
situation? If "Yes," please explain. (2) Are you currently gaining customer service experience anywhere other than in this employment situation? If "Yes," please explain.

Although Table 2 shows there were slight differences in the demographics of the control group and the experimental group, the two groups were judged to be comparable. The small differences included, for example, that the control group was slightly older and a few more of them were gaining concurrent customer service experience elsewhere. However, more of the participants in the experimental group had some college education; they also had slightly more prior computer experience than the control group. For purposes of this research, these differences in demographics were not viewed as meaningful, and the two groups were considered comparable.

Statistical Findings

Statistical programs were written using the SAS software on the Iowa State University mainframe computer. These programs provided data regarding frequencies, reliability, t-test of two means, and analysis of variance (ANOVA), as well as descriptive statistics.

Reliability

To determine the reliability of the test questions, the Cronbach Coefficient Alpha method was used. This method evaluates the patterns among a set of Pearson product-moment correlation coefficients.
For the cognitive test (Measurement # 1) and the computer skills test (Measurement # 2), coefficients for individual test items were compared with subscores within the instruments; for example, on Measurement # 1, question 1a was compared with the subscore for the five items: 1a, 1b, 1c, 1d, and 1e, and question 2a was compared with the subscore for 2a, 2b, 2c, 2d, 2e, and 2f. A second reliability test for the cognitive test (Measurement # 1) was computed where the correlation coefficients for individual items were compared with the total test score. This was also done for the computer skills test (Measurement # 2).

When the correlation coefficients for individual measurement items with the subscore or with the total score were low, they were removed from the data set and not considered in further calculations. The first items eliminated were those that produced a negative coefficient because they clearly reduced the reliability of the instruments. The reliabilities then were computed again. Upon review, additional questions were eliminated that produced marginal correlations. On the third round of reviewing correlations, more questions were eliminated when by doing so the overall value of Cronbach's alpha would be raised. In general, questions with a correlation of less than 0.10 were deleted.

The reliability coefficients for standardized variables were used rather than the coefficients for raw variables. The standardized variable calculation treats scores as though they were z-scores and therefore provides more constant and more comparable results.
Cognitive Test of Knowledge (Measurement # 1). The correlation coefficients for individual items compared with their respective subscores were low for questions 1b, 1e, 2b, 2d, 3f, 4d, 7a, 7b, 8e, and 9b, so these questions were eliminated from further statistical computations. Table 3 illustrates the reliability coefficients of subscores for the remaining items in Measurement # 1.

<table>
<thead>
<tr>
<th>Question Number (subscores)</th>
<th>Cronbach Alpha Reliability Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (1a, 1c, 1d)</td>
<td>.49</td>
</tr>
<tr>
<td>2 (2a, 2c, 2e, 2f)</td>
<td>.64</td>
</tr>
<tr>
<td>3 (3a, 3b, 3c, 3d, 3e, 3g, 3h)</td>
<td>.44</td>
</tr>
<tr>
<td>4 (4a, 4b, 4c)</td>
<td>.64</td>
</tr>
<tr>
<td>5 (5a, 5b, 5c, 5d, 5e, 5f, 5g, 5h, 5i)</td>
<td>.89</td>
</tr>
<tr>
<td>6 (6a, 6b, 6c, 6d, 6e, 6f, 6g, 6h)</td>
<td>.81</td>
</tr>
<tr>
<td>8 (8a, 8b, 8c, 8d)</td>
<td>.49</td>
</tr>
<tr>
<td>9 (9a, 9c, 9d, 9e, 9f, 9g, 9h, 9i, 9j, 9k, 9l, 9m, 9n)</td>
<td>.76</td>
</tr>
</tbody>
</table>

As Table 3 illustrates, the Cronbach alpha reliability coefficients for the subscores ranged from .44 to .89.

A second reliability score was computed for Measurement # 1. The correlation coefficients for individual items were compared with Measurement # 1 as a whole (excluding questions 1b, 1e, 2b, 2d, 3f, 4d, 7a, 7b, 8e, and 9b as identified above). In this test, questions 3b and 9i were found to have low
coefficients with the instrument as a whole and were eliminated from computations in this reliability test. The Cronbach alpha reliability coefficient for the remaining items in Measurement # 1 as a whole was found to be 0.85. However, more trust should be placed in the reliability coefficients of the subscores identified in Table 3 than in the reliability score for the test as one entity because the Cronbach alpha reliability coefficient is known to inflate coefficients when a large number of test items are involved. In the case of Measurement # 1, the test items totalled 61.

Computer Skills Test (Measurement # 2). Measurement # 2 evaluated computer skills in a simulated situation. This measurement contained two sections, and therefore two subscores were computed. Part A included questions 1 - 19, and Part B was composed of questions 20 - 34. A low correlation was found for question 2 with the subscore of questions 1 through 19, so question 2 was eliminated from further computations. Cronbach alpha reliability coefficients for the two subscores for the remaining items are illustrated in Table 4.

Table 4: Reliability Coefficients for Measurement # 2

<table>
<thead>
<tr>
<th>Part (subscores)</th>
<th>Cronbach Alpha Reliability Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (questions 1-19)</td>
<td>.80</td>
</tr>
<tr>
<td>B (questions 20-34)</td>
<td>.96</td>
</tr>
</tbody>
</table>
As Table 4 shows, the Cronbach alpha reliability coefficients for the two subscores of Measurement # 2 were both high, with Part B having a coefficient of .96.

A second reliability score was computed on Measurement # 2. The correlation coefficients for individual questions were compared with Measurement # 2 as a whole (excluding question 2 as identified above). In this test, questions 8 and 10 were found to have low coefficients and were eliminated from computations in this reliability test. The Cronbach alpha reliability coefficient for the remaining items in Measurement # 2 as a whole was found to be 0.92. This coefficient is artificially high because the Cronbach Alpha calculation tends to produce higher reliability scores when many test items are considered. The number of test items considered in this analysis was 34.

Customer Service Test (Measurement # 3). This measurement evaluated telephone customer service skills in a simulated situation. It consisted of 14 test items and no subscores. Questions 1, 2, and 13 had low item-total correlations and therefore were not used for further computations. The reliability coefficient for the remaining items of Measurement # 3 was .57.

On-the-Job Performance Measures (Measurement # 4). Measurement # 4 was an on-the-job performance test administered four weeks after the completion of training. This measurement gathered three scores from electronically stored performance data. The performance measures were:

1. Number of cardholder (or authorized user) contacts per hour
2. Percent of cardholder contacts which PPY (promised to pay)

3. Percent of PPY where money was actually received

The Cronbach alpha reliability coefficients were very low for each of the three performance measures when compared with the correlation of the total measurement. The reliability scores for Measurement # 4 are identified in Table 5.

<table>
<thead>
<tr>
<th>Performance Measures</th>
<th>Cronbach Alpha Reliability Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-0.07</td>
</tr>
<tr>
<td>2</td>
<td>0.05</td>
</tr>
<tr>
<td>3</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Table 5 relates that the reliability coefficient for performance measure 1 (number of cardholder contacts per hour) compared with the entire instrument was -0.07; for performance measure 2 (the percent of cardholder contacts which promised to pay) compared with the total was 0.05; and for performance measure 3 (the percent of promises to pay where money was actually received) compared with the total test was 0.

Because of the low reliability scores for the three performance items, Measurement # 4 was no longer regarded as one measurement entity. From this
point forward, the performance scores were considered as three autonomous measurements rather than one collective measurement in computations and discussion. For purposes of clarity, the first performance measure (number of cardholder contacts per hour) was renamed Measurement # 4.1; the second performance measure (percent of cardholder contacts which promised to pay) was renamed Measurement # 4.2; and the third performance measure (percent of promises to pay where money was actually received) was renamed Measurement # 4.3.

**Descriptive Statistics**

Appropriate descriptive statistics were calculated for each measurement item, including numbers of participants, mean scores, and standard deviations. Table 6 presents these statistics for the control group and the experimental group separately.

Table 6 shows that the mean scores for the experimental group were higher than the mean scores for the control group on all measurements.

Table 6 also shows a smaller number of participants for both the control group and the experimental group when data was collected for Measurement # 4, which was one month after the end of training. See Table 1 for further information about the number of participants. Also, one of the 36 participants in the experimental group chose not to participate in Measurement # 3; therefore, the total number of participants in the experimental group for that measurement was 35.
Table 6: Descriptive Statistics

<table>
<thead>
<tr>
<th>Measurement</th>
<th>n (Number)</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement # 1 (maximum = 61)</td>
<td>Control</td>
<td>26</td>
<td>29.15</td>
</tr>
<tr>
<td></td>
<td>Experimental</td>
<td>36</td>
<td>34.25</td>
</tr>
<tr>
<td>Measurement # 2 (maximum = 68)</td>
<td>Control</td>
<td>26</td>
<td>34.46</td>
</tr>
<tr>
<td></td>
<td>Experimental</td>
<td>36</td>
<td>45.56</td>
</tr>
<tr>
<td>Measurement # 3 (maximum = 70)</td>
<td>Control</td>
<td>26</td>
<td>35.38</td>
</tr>
<tr>
<td></td>
<td>Experimental</td>
<td>35</td>
<td>39.43</td>
</tr>
<tr>
<td>Measurement # 4.1 (no maximum)</td>
<td>Control</td>
<td>25</td>
<td>10.81</td>
</tr>
<tr>
<td></td>
<td>Experimental</td>
<td>32</td>
<td>12.16</td>
</tr>
<tr>
<td>Measurement # 4.2 (no maximum)</td>
<td>Control</td>
<td>25</td>
<td>90.36</td>
</tr>
<tr>
<td></td>
<td>Experimental</td>
<td>32</td>
<td>95.70</td>
</tr>
<tr>
<td>Measurement # 4.3 (no maximum)</td>
<td>Control</td>
<td>25</td>
<td>39.38</td>
</tr>
<tr>
<td></td>
<td>Experimental</td>
<td>32</td>
<td>40.15</td>
</tr>
</tbody>
</table>
T-tests of Two Means

The research design included a control group and an experimental group. The control group received training using traditional training methods, and the experimental group received training via Accelerated Learning methods. The research hypotheses called for determining if there were significant differences between the means of the control group and the experimental group. Since the hypotheses called for analyzing statistics from two samples, a t-test of two means was computed. An "independent" t-test was used because participants in the two groups were autonomous of each other. The data from one group did not influence the data of the other group.

The first step in an independent t-test of two means is to determine the amount of variance between the scores of the groups by calculating an F-statistic. This calculation was completed, and Table 7 illustrates the measurement items where a significant difference at the .05 level in the F-statistic was found and where a significant difference was not found.

As Table 7 presents, variances were found to be significantly different for Measurement # 4.2 but were not found to be significant different for the other measurements.

When the difference in variances was significant at the .05 level, which was the case for Measurement # 4.2, a "separate" t-test was used in the calculation of the t statistic. When the difference in variance was not significant at the .05 level, which was the case for the remaining measurements, a "pooled" t-test was used.
Table 7: Probability of Falsely Concluding that the Variances of the Groups Are Different

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Variances Were Significantly Different (F-statistic w/ p ≤ .05)</th>
<th>Variances Were Not Significantly Different (F-statistic w/ p &gt; .05)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement # 1</td>
<td></td>
<td>0.42</td>
</tr>
<tr>
<td>Measurement # 2</td>
<td></td>
<td>0.11</td>
</tr>
<tr>
<td>Measurement # 3</td>
<td></td>
<td>0.99</td>
</tr>
<tr>
<td>Measurement # 4.1</td>
<td></td>
<td>0.15</td>
</tr>
<tr>
<td>Measurement # 4.2</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>Measurement # 4.3</td>
<td></td>
<td>0.53</td>
</tr>
</tbody>
</table>

Table 8 presents the t-test results of each measurement. It also identifies those measurements where the difference between the means of the two groups was significant and where the difference was not significant.

As identified in Table 8, Measurement # 1 and Measurement # 2 produced significant differences between the Accelerated Learning group (the experimental group) and the traditional training group (the control group). To determine which group performed better, the mean scores were reviewed in Table 6. Since the mean scores for the Accelerated Learning group were higher than the mean scores for the traditional training group, it was determined that the Accelerated Learning participants (experimental group) performed significantly better than the traditional training participants (control group) on a cognitive test to measure learning (Measurement # 1) and on a computer skills test (Measurement # 2).
Although the Accelerated Learning participants outperformed the traditional training group on a customer service test (Measurement # 3), on Number of cardholder contacts per hour (Measurement # 4.1), on Percent of cardholder contacts which promised to pay (Measurement # 4.2), and on Percent of promises to pay when money actually was received (Measurement # 4.3), the difference in performance was not significant at the .05 level.

Therefore:

Research hypothesis 1, that participants in the experimental group will perform at a significantly higher level (p ≤ .05) on a cognitive test of job knowledge than the participants in the control group, was supported. Data for this hypothesis test were gathered from Measurement # 1.
Research hypothesis 2, that participants in the experimental group will perform at a significantly higher level (p ≤ .05) on a skill test of computer usage than the participants in the control group, was supported. Data for this hypothesis test were gathered from Measurement # 2.

Research hypothesis 3, that participants in the experimental group will perform at a significantly higher level (p ≤ .05) on a skill test of telephone customer service than the participants in the control group, was not supported. Data for this hypothesis test were gathered from Measurement # 3.

Research hypothesis 4, that four weeks after training, the participants in the experimental group will perform at a significantly higher level (p ≤ .05) on three on-the-job performance scores than the participants in the control group, was not supported. Data for this hypothesis test were gathered from Measurements # 4.1, # 4.2, and # 4.3.

In reviewing the above results, it is important to note that this study identifies one-tailed tests because the research hypotheses are directional. In other words, the entire .05 probability area is in one end of the bell curve. The statistical software program, however, assumed the hypotheses were non-directional and split the .05 probability area in half, with .025 in each end of the bell curve. Therefore, the hypotheses actually were tested at the .025 level rather than the .05 level. The .025 level probability area is smaller than the .05 area and therefore is a more stringent test to pass. If the true .05 significance level had been used with
a one-tailed test, the t-test results of Measurement # 3 and # 4.1 would have shown a significant difference between the two groups.

Analysis of Variance

The analysis of variance (ANOVA) methodology was used to determine whether specific aspects of this research affected the outcomes. In particular, the multifactor analysis of co-variance process was used since several factors were involved, one of which was a continuous variable (age).

The researcher used an ANOVA process to answer three questions:

ANOVA 1. Did the demographics of the participants affect their on-the-job performance (Measurements # 4.1, # 4.2, and # 4.3)?

ANOVA 2. Did the demographics of the participants and the results of the cognitive test (Measurement # 1), the computer skills test (Measurement # 2), and the customer service test (Measurement # 3) affect on-the job performance (Measurements # 4.1, # 4.2, and # 4.3)?

ANOVA 3. Did the demographics of the participants affect the scores on the cognitive test (Measurement # 1), the computer skills test (Measurement # 2), and the customer service test (Measurement # 3)?

The analysis of variance process depends on the use of means and standard deviations. ANOVA tests produce an F-statistic, which is calculated using the ratio of the mean square for differences attributable to variation in the main effects
and co-variates over mean square error. To be consistent with the rest of this study, the level of significance was set to .05.

To get valid results using analysis of variance, the distribution of the dependent variable must be bell-shaped. Participant performance scores on Measurement # 4.1, # 4.2, and # 4.3 were determined to have bell-shaped distributions. Measurements # 1, # 2, and # 3 were assumed to also have normal distributions.

Results of ANOVA Tests

In the three ANOVA tables that follow (Table 9, Table 10, and Table 11), the abbreviated heading DF is degrees of freedom, SS is sum of squares, MS is mean square, F Value is the computed ratio, and Pr > F is the attained significance value. To avoid confusion, the more common term "Between" was used rather than the SAS term "Model," and the term "Within" was used rather than "Error."

For clarification purposes, the statistics of the over-all question are presented; however, the individual statistics for each independent variable are not presented. For example, on Table 9 where the first dependent variable is Measurement # 4.1, the effects of all the demographics as a whole are presented rather than the individual statistics for each demographic factor, such as gender, age, and education. When an individual demographic factor was significant, it is discussed in the text describing the tables. For examples, the reader is directed to the upcoming discussion regarding Table 10 and Table 11.
Results of ANOVA 1. Did the demographics of the participants affect the on-the-job performance (Measurements # 4.1, # 4.2, and # 4.3)?

Table 9 presents the analysis of variance statistics for this question and shows that the combined demographic factors did not contribute significantly to the Number of cardholders contacted per hour (Measurement # 4.1), the Percent of cardholder contacts which promised to pay (Measurement # 4.2), or the Percent of those who promised to pay where money actually was received (Measurement # 4.3). Also, none of the demographics on an individual basis produced a significant result.

Table 9: Analysis of Variance (ANOVA) for the Combined Effect of Demographics on Measurements # 4.1, # 4.2, and # 4.3

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>SS</th>
<th>MS</th>
<th>F VALUE</th>
<th>Pr &gt; F</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Measurement # 4.1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between</td>
<td>12</td>
<td>118.47</td>
<td>9.87</td>
<td>1.08</td>
<td>0.40</td>
</tr>
<tr>
<td>Within</td>
<td>44</td>
<td>403.82</td>
<td>9.18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>56</td>
<td>522.29</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Measurement # 4.2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between</td>
<td>12</td>
<td>2669.54</td>
<td>222.46</td>
<td>1.35</td>
<td>0.23</td>
</tr>
<tr>
<td>Within</td>
<td>44</td>
<td>7254.74</td>
<td>164.88</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>56</td>
<td>9924.28</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Measurement # 4.3</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between</td>
<td>12</td>
<td>435.30</td>
<td>36.28</td>
<td>1.43</td>
<td>0.19</td>
</tr>
<tr>
<td>Within</td>
<td>44</td>
<td>1113.15</td>
<td>25.30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>56</td>
<td>1548.45</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Results of ANOVA 2. Did the demographics of the participants combined with the results of the cognitive test (Measurement # 1), the computer skills test (Measurement # 2), and the customer service test (Measurement # 3) affect the on-the-job performance (Measurements # 4.1, # 4.2, and # 4.3)?

Table 10 presents the analysis of variance statistics and illustrates that the combined effect of the demographics of participants and the results of Measurement # 1, # 2, and # 3 was not significant on the Number of cardholders contacted per hour (Measurement # 4.1). However, in the analysis considering each of the demographics individually and each of the three tests

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>SS</th>
<th>MS</th>
<th>F VALUE</th>
<th>Pr &gt; F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement # 4.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between</td>
<td>15</td>
<td>188.72</td>
<td>12.58</td>
<td>1.55</td>
<td>0.13</td>
</tr>
<tr>
<td>Within</td>
<td>44</td>
<td>333.57</td>
<td>8.14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>56</td>
<td>522.29</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measurement # 4.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between</td>
<td>15</td>
<td>3013.47</td>
<td>200.90</td>
<td>1.19</td>
<td>0.32</td>
</tr>
<tr>
<td>Within</td>
<td>41</td>
<td>6910.81</td>
<td>168.56</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>56</td>
<td>9924.28</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measurement # 4.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between</td>
<td>15</td>
<td>484.41</td>
<td>32.29</td>
<td>1.24</td>
<td>0.28</td>
</tr>
<tr>
<td>Within</td>
<td>41</td>
<td>1064.05</td>
<td>25.95</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>56</td>
<td>1548.45</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
individually, the customer service test (Measurement #3), did show a significant effect (Pr > F = 0.01) on Number of cardholders contacted per hour (Measurement #4.1), even though the overall model did not show such an effect.

Table 10 also illustrates that the combined effects of the demographics and the results of Measurement #1, #2, and #3 was not significant on the Percent of cardholders which promised to pay (Measurement #4.2). Also, none of the demographics or measurements on an individual basis produced a significant effect.

Table 10 illustrates that the combined effect of the demographics and the results of Measurements #1, #2, and #3 was not significant on the Percent of those who promised to pay where money actually was received (Measurement #4.3). Also, none of the demographics or measurements on an individual basis produced a significant effect on Measurement #4.3.

Results of Anova 3. Did the demographics of the participants affect scores on the cognitive test (Measurement #1), the computer skills test (Measurement #2), or the telephone customer service test (Measurement #3)?

The statistics for the analysis of variance for this question are presented in Table 11. This table illustrates that the overall model showed no effect of the combined demographics on Measurement #1 (Pr . F = 0.12). However, in an analysis of each of the demographic factors individually, age did show a significant effect (Pr > F = 0.05). Younger participants performed significantly better on the cognitive test (Measurement #1).
Table 11: Analysis of Variance (ANOVA) for the Combined Effect of Demographics on Measurements # 1, # 2, and #3

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>SS</th>
<th>MS</th>
<th>F VALUE</th>
<th>PR &gt; F</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Measurement # 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between</td>
<td>12</td>
<td>1076.38</td>
<td>89.70</td>
<td>2.32</td>
<td>0.12</td>
</tr>
<tr>
<td>Within</td>
<td>44</td>
<td>1895.83</td>
<td>38.69</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>56</td>
<td>2972.21</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Measurement # 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between</td>
<td>12</td>
<td>5994.87</td>
<td>499.57</td>
<td>3.51</td>
<td>0.00</td>
</tr>
<tr>
<td>Within</td>
<td>41</td>
<td>6967.97</td>
<td>142.20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>56</td>
<td>12962.84</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Measurement # 3</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between</td>
<td>12</td>
<td>1235.18</td>
<td>102.93</td>
<td>1.24</td>
<td>0.29</td>
</tr>
<tr>
<td>Within</td>
<td>48</td>
<td>3993.51</td>
<td>83.20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>5228.69</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The model did find a significant effect (Pr > F = 0.00) of combined demographics on the computer skills test (Measurement # 2). In reviewing the statistics for individual demographic factors, age (Pr > F = 0.04) and customer service experience (Pr > F = 0.03) significantly affected the outcome of Measurement # 2. The younger participants and those with more customer experience seemed to perform better on the computer skills test (Measurement # 2). The remaining demographics individually did not affect the outcome of Measurement # 2 significantly except that the experimental group performed significantly better than the control group.
Participant scores on the customer service test (Measurement # 3) were not significantly affected by the combined demographic factors or by any individual demographic factor.

**Concluding Comments**

To test the four research hypotheses, statistical computations consisting of frequencies, reliability tests, t-tests of two means, and ANOVAs were used, in addition to descriptive statistics. The data suggest that the Accelerated Learning participants performed significantly better than traditional training participants on a cognitive test and a computer skills test, which support research hypotheses 1 and 2.

Although the Accelerated Learning participants outperformed the traditional training group on a telephone customer service test and on three measures of on-the-job performance, the level of performance was not significant at the .05 level. Chapter 5, Summary, Discussion, Conclusions, and Recommendations, addresses possible reasons for the research hypotheses outcomes and the implications of such outcomes.
5. SUMMARY, DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

Summary of the Study

The purpose of this research was to investigate the effectiveness of Accelerated Learning methods when compared with the effectiveness of the same course taught using traditional training methods. More specifically, the researcher wanted to know whether the training program involving Accelerated Learning significantly improved the employee's job knowledge, skills, and on-the-job performance when compared with traditional training methods. The Accelerated Learning training involved concepts and methods originally developed by Georgi Lozanov (1978) and adapted by Don Schuster (1986, 1989, 1991), Colin Rose (1985), Lynn Dhority (1991), Allyn Prichard and Jean Taylor (1980), and others.

Participants in the study were employees of The Financial Center located in a midwestern city and were in a required 64-hour (eight-day) new employee training program. The control group received the training content via traditional training methodology. The training with the experimental group was facilitated with Accelerated Learning methodology. The same four evaluation instruments were administered to participants in the control group and in the experimental group.
The Research hypotheses tested in this study were stated as:

Research hypothesis 1. The participants in the experimental group will perform at a significantly higher level (p ≤ .05) on a cognitive test of job knowledge than the participants in the control group.

Research hypothesis 2. The participants in the experimental group will perform at a significantly higher level (p ≤ .05) on a skill test of computer usage than the participants in the control group.

Research hypothesis 3. The participants in the experimental group will perform at a significantly higher level (p ≤ .05) on a skill test of telephone customer service than the participants in the control group.

Research hypothesis 4. Four weeks after training, the participants in the experimental group will perform at a significantly higher level (p ≤ .05) on three on-the-job performance scores than the participants in the control group.

Measurement instruments were developed to gather data to test for each of the four hypotheses. Additionally, participant demographic data were collected, and informed consent explanations were distributed. Data were gathered upon graduation from the training program except for the on-the-job performance reports which were collected four weeks after training was completed.

Sixty-two participants (26 in the control group and 36 in the experimental group) completed the training program and were involved in the testing of hypotheses 1, 2, and 3. Fifty-seven participants (25 in the control group and 32 in the experimental group) were on the job one month later and were involved in the
testing of hypothesis 4. The control group and the experimental group were deemed comparable in demographic factors.

The senior trainer facilitated instruction for both the control group and the experimental group. The content of the training sessions was identical for the control group and the experimental group. The control group was taught using traditional training methods, such as hands-on activities, case problems, role plays, and question-and-answer sessions. The experimental group received training using Accelerated Learning processes, such as physical exercise, mental relaxation techniques, background music, global over-views and reviews, games for mental reinforcement, and much use of pictures and color.

Three measurements were administered at the end of the training program. Data for the fourth instrument were gathered from standard company performance reports one month after the end of training. Data were analyzed statistically through the use of frequency reports, reliability tests, t-tests of two means, and ANOVA techniques.

The Accelerated Learning group did perform significantly better on a cognitive test of job knowledge and on a skill test of computer usage, supporting research hypotheses 1 and 2.

Although participants in the Accelerated Learning group outperformed the traditional training group, the findings do not support the research hypotheses that the experimental group will perform significantly better on a telephone customer
service skills test or on actual on-the-job performance measured one month after the end of training.

Participant scores on the customer service test appeared to have a positive effect on the Number of cardholders contacted per hour (Measurement # 4.1). Age seemed to be a factor on the outcome on the cognitive test (Measurement # 1), with younger participants scoring higher than older participants. Age and previous customer service experience seemed to affect the outcome of the computer skills test (Measurement # 2), with younger participants and those with more customer service experience performing better than older participants with less customer service experience.

Discussion

The findings in this study are consistent with much of the research that has been done in the past to determine the effectiveness of Accelerated Learning. Many previous studies have identified a significant difference between Accelerated Learning groups and control groups. Although some previous research studies revealed no significant difference with the use of Accelerated Learning, the trend of the studies surveyed did point in favor of Accelerated Learning. In a comprehensive review of 14 research studies, Schuster and Gritton (1986) found that in well-controlled studies, research participants in Accelerated Learning groups consistently outperformed participants in control groups. Moon, Render, Dillow, and Pendley (1986), in a meta-analysis of 14 research studies, also found
Accelerated Learning participants consistently performed at higher levels than did control group participants. Moon et al. also found that participants in well-controlled research studies performed better than participants in poorly-controlled studies.

The researcher believes the well-controlled design of this study contributed to providing significant results. One of the most important design aspects was the training facilitator. All training sessions were facilitated by The Financial Center's Senior Trainer, who had received minimal exposure to Accelerated Learning concepts and methods until after the classes in the control group had been trained and tested. Therefore, the researcher believes there was insignificant contamination between the two methodologies.

The Hawthorne effect, however, may have influenced the Senior Trainer’s actions with the control group. She knew her students would be tested; she may have had the natural reaction of wanting them to perform well. She may unconsciously have thought their performance was a reflection of her performance. Because she had been facilitating this training program for several years and had tailored it for her needs, she may have felt more ownership of the training method than a beginning trainer.

Another important design aspect was the amount of time devoted to training the trainer in Accelerated Learning methodologies. The Financial Center devoted five weeks of the senior trainer’s time to learn about Accelerated Learning and to redesign the training program. During these five weeks, all the necessary props
and aids to implement Accelerated Learning were developed, including, for example, revised written training materials, Bingo game, mind map posters, mnemonic (memory aid) posters, and room rearrangement. The trainer even had time to practice presentation skills with classical music!

Another strength of the study was the concept and construction of the computer skills test (Measurement #2). This measurement was a job simulation where participants used the computer to provide answers to typical customer questions. It was a tightly-constructed, objective evaluation with no ambiguity in the answers and was the only timed evaluation. Although all four measurements were pilot-tested and refined, Measurement #2 provided the highest reliability coefficients.

On the other hand, the customer service test (Measurement #3) was not as well conceived as the others. During this evaluation, participants talked one-on-one with a simulated customer, Burt (pseudonym). Burt evaluated each participant on 14 criteria thought to be relatively discernable and measurable. Burt did not know the participants and they did not know him.

Three of the 14 questions on the measurement could not be used because of low reliability coefficients. Another symptom of a problem with this measurement was that Burt's verbal comments about participants' performance did not match the written scores he gave them. For example, immediately after testing a group, he said, "Sue (pseudonym) was the best one I've ever talked with." But her score on the instrument was not the highest for that group or for all participants up to that
point. A similar comment was made about someone being the worst one he'd talked with; and again, the form he completed did not match his verbal comments. This contradiction could have been caused by an invalid form and/or by inconsistent use of the form.

Prior to the commencement of the study, the researcher talked with Burt about being consistent and objective with each participant. In reality, however, evaluating participants' telephone customer service skills called for judgment that a seasoned evaluator would have found challenging, to say nothing of a rookie with the company who had not been through the training program himself. The problem was magnified by asking Burt to be consistent with six groups over a four-month period. With this length of time between testing sessions, continuity was almost impossible. The researcher believes the measurement was not as well conceived and the instrument not as well designed as the other measurements. An improved design could have included, for example, a team of three evaluators rather than one. Or, the telephone conversation could have been recorded and two or more evaluators could have codified the conversation. Inter-rater reliability could have been tested. Since the conversations were recorded, the evaluation of all the taped conversations could have occurred at one time. Finally, an in-depth training session, rather than a short conversation, could have been held with the evaluator about maintaining consistency and objectivity.

The on-the-job performance measures (Measurement # 4.1, # 4.2, and # 4.3) are also somewhat illusive. These evaluations requested data from a standard
company report that lists individual employee performance data on 17 different items. Three of the most important performance areas were selected as measures for this research: Number of cardholder contacts per hour, Percent of cardholder contacts which promised to pay, and Percent of promises to pay where money is actually received. The company report is electronically stored and is produced and posted weekly. The report is a useful tool for management to track individual employee performance by looking for trends in performance over a period of time. However, for the purposes of this research, the researcher believes the report may not have been a true indicator of individual performance, not because of the concept of the report, but because it was used on a one-time, snap-shot basis. An improved research design would have been to gather data from the reports for several consecutive weeks so that the trend in performance of experimental group participants and control group participants could have been observed.

The researcher believes that, although using the company report data was an attempt to gather quantitative performance data, using data from only one week influenced the participant's scores and therefore the outcome of research hypothesis 4.

It is not surprising that Accelerated Learning participants outperformed traditionally trained participants on the cognitive test (Measurement # 1) and the computer skills test (Measurement # 2) because of the technical content of those evaluations. Many questions on the cognitive test required rote memorization to answer them correctly. And many of the questions involved coding, decoding, or
translating information, such as two-digit numerical codes to signify, for example, cardholder contact, promise to pay, recently made payment, bankruptcy, and death. The computer skills test required technical skills of computer usage, such as how to: access screens, use two mainframe systems and toggle between them, and cut-and-paste information. The computer skills test also required participants to use and translate numerical codes instantaneously.

Accelerated Learning was originally developed as an improved method to learn a foreign language. Foreign language learning involves technical content and requires coding and translating codes in the form of word substitution. The researcher suggests that, since the cognitive test and the computer skills test were technical in nature, they may have been more likely to provide significant results. Likewise, because the customer service test did not seek technical information, it may have been less likely to produce a significant difference.

In preliminary results prepared for The Financial Center using only arithmetic averages and weighted averages, the experimental group performed better than the control group on all four measurements. Also, Table 6, Descriptive Statistics, presents higher mean scores for the Accelerated Learning group when compared with the traditional training group on all Measurements. Since the data point in the direction of the Accelerated Learning group outperforming the traditional training group, the researcher suggests that a larger sample size may have produced a significant difference on more than two of the four measurements.
Age appeared to have been a factor in the outcomes on the cognitive test (Measurement # 1) and on the computer skills test (Measurement # 2). The researcher suggests that this may be due to younger people having been in more recent cognitive testing situations and perhaps, therefore, having less hesitancy about taking such tests. Younger participants also may be less inhibited and more confident about using and experimenting with computers; which may have influenced the outcomes in the computer skills test.

The outcome on the customer service test seemed to have had an effect on the Number of cardholders contacted per hour. Since all calls are computer-dialed and the participant has no control over who is called or who is home, the researcher can suggest only that good customer service skills on the part of the caller may help cardholders be more truthful about who they are when receiving a call about a past-due account.

Previous customer service experience seemed to affect performance on the computer skills test. Since there is no obvious reason for this effect, the researcher wonders if customer service experience helps collection associates know more about the types of questions that customers ask and increases the sense of responsibility to provide the answers. Another possible explanation for such a relationship is that the sample size in this study was too small.

The trainer shared in writing some thoughts and observations about Accelerated Learning with the researcher. She wrote, for example: "Students seemed to enjoy Accelerated Learning more than our previous training; they really
got into it. When I forgot to turn the music on, they reminded me because they preferred to have it on all the time. And I, as the trainer, am having more fun. We all are rejuvenated and seem to be learning more."

Further, Accelerated Learning seems to take less time than traditional training, as observed by the trainer, "Even though we planned to use the same amount of time as before for each section, I found most sections took less time; we used the extra time productively, for example, one day they made mind maps summarizing the unit just completed." In fact, the trainer indicated she may be able to cut training time by four or more hours. The reduced time factor also was observed by the researcher in the administration of the evaluations. Although not documented with the clock, participants in the experimental group appeared to take less time to complete the evaluations than did participants in the control group.

These kinds of comments lead the researcher to think that even when trainers do not wish to fully implement Accelerated Learning, it may do them well to consider practicing parts of it. Making learning more holistic, more global, and more fun may improve the learning, and, at the very least, may cause the learner increased pleasure in attending training sessions.

In this research project, Accelerated Learning as a learning method was explained to the learners at the beginning of the training session. Throughout the session as new methods and learning aids were introduced, they were explained in the context of Accelerated Learning. The trainer consciously assisted the learners with information about learning. The researcher believes Accelerated Learning can
be an important vehicle to helping individuals learn how they learn. By experiencing increased learning through Accelerated Learning and by being more open to learning, learners will understand their own learning requirements. If they understand their learning, they are more likely to take responsibility for their learning, and the trainer and the learner can have a partnership in learning. When individuals in an employment context understand how they learn and when they want to learn, learning organizations are more likely to develop. The researcher suggests giving even more intentionality to helping others learn how they learn by creating multi-pathed and self-paced learning environments within the Accelerated Learning arena.

Conclusions

Although this study was not without limitations, it did research an area that has been nearly void of research, that being training programs in business and industry. It also investigated an area even more unique for controlled testing, and that is the effect of training on actual on-the-job performance.

The conclusions derived from the statistical results are stated as follows:

This study suggests that Accelerated Learning methods appear to be more effective than traditional training approaches in new employee training at The Financial Center when measured by a cognitive paper-and-pencil test and by a computer skill simulation.
The study also suggests that although the Accelerated Learning group outperformed the traditional training group on a telephone customer service simulation and on actual on-the-job performance, the difference was not significant.

**Recommendations for Further Research**

The research found significant differences between the experimental group and control group in tests of job-related knowledge and computer skills. However, the study should be replicated several times before trends can be identified and generalizations can be made about the use of Accelerated Learning in training programs.

In addition to the replication of this study, the researcher recommends documenting the effects of more training programs, especially those involving Accelerated Learning, in private and public organizations. It is indeed the unique training program today which is evaluated statistically on even one measurement, to say nothing of using several measurements.

This study encompassed three of the four "levels" of evaluation. The four levels were developed originally by Kirkpatrick and are commonly accepted by training and development professionals. Level two evaluated cognitive learning and answered the question: Did the participant gain additional knowledge as measurable on a paper-and-pencil test? Level three measured the transfer of skills to the job situation; in this case, both computer skills and telephone customer service skills were evaluated. Level four evaluated the bottom-line impact of the
training by measuring each participant's contribution to the weekly operating results. It is unusual for a study to encompass more than one level of training evaluation. The researcher recommends that evaluation in more training programs should include the documented use of several levels of evaluation.

One of the reasons why documenting Accelerated Learning in training programs is tricky is because of the confusion about what Accelerated Learning really is. The concept of Accelerated Learning is used loosely, and often bits and pieces of it are used randomly to "liven up" a training program. The definition of Accelerated Learning, according to the International Alliance for Learning and the Center for Accelerated Learning, is almost any type of effective training that is learner centered. The use of Accelerated Learning today is less structured and less recipe-like than Suggestopedia or SALT and therefore is more difficult to distinguish in learning methodologies with experimental groups and control groups.

The researcher also recommends additional study in the following areas:

Research is recommended to investigate the effects of Accelerated Learning with other training programs at The Financial Center.

Research is recommended to investigate the long-term difference between the control group and the experimental group, such as six months or one year.

Research is recommended to gather feedback from supervisors regarding their perceptions about job knowledge, skill, and performance of participants in the experimental group compared with the control group.
Research is recommended to investigate the effects of Accelerated Learning on other aspects of employment, such as attrition and attitude surveys.

Research is recommended to set performance benchmarks which may be less illusive and over which learners may have more control.

Research is recommended to set performance benchmarks for newly hired employees (such as one-month or two-month employees) rather than comparing them with all other employees in the department.

Research is recommended to gather data when learners are in voluntary, non-mandated learning situations rather than required on-the-job training programs.

Research is recommended to investigate further the use of Accelerated Learning in learning how to learn and in building learning organizations. It is through extending Accelerated Learning in these areas that learning methodology truly will make a difference and more people will become lifelong learners.
APPENDIX A: INFORMED CONSENT
INFORMED CONSENT

This Company is working with Darlene Bradner of Iowa State University to evaluate the effectiveness of the training program in which you are currently participating.

At the conclusion of the workshop, you will be asked to participate in three evaluations which demonstrate your level of job knowledge and skill. One of the evaluations is a paper-and-pencil test, one is a computer test, and one is a telephone call with a simulated customer. The three evaluations combined will take approximately one hour.

Also, a standard computer-generated report itemizing your computer entries approximately one month after you complete training will be used in the research.

You are among at 50-60 employees included in this evaluation. The purpose of this research is to assist this Company in determining the most effective training programs.

Darlene will code your identity to ensure your anonymity. You will write your name on a small perforated-like section in the upper-right corner on each form. Darlene will remove this name section and write your numerical code-name on your form. She will maintain a separate list of your names matched with the numerical code-names. As she prepares the necessary analysis and reports for her research, she will use only these unidentifiable code-names. No one, including anyone from this Company or from Iowa State University, will know your identity. Every effort will be made to maintain complete confidentiality throughout the entire project.

Your cooperation in participating in these evaluations is desired. However, you are free to not participate or to withdraw from them at any time for any reason and without any penalty from this Company.

If you have any questions about this project, you may contact Darlene at 4705 Western Hills Drive, West Des Moines, Iowa 50265, telephone 225-8188 or through the Adult Education/Professional Studies Division, Iowa State University, N-243 Lagomarcino, Ames Iowa 50011.
APPENDIX B: APPROVAL PAGE OF THE HUMAN SUBJECTS FORM
### Checklist for Attachments and Time Schedule

The following are attached (please check):

12. □ Letter or written statement to subjects indicating clearly:
   a) purpose of the research
   b) the use of any identifier codes (names, #’s), how they will be used, and when they will be removed (see Item 17)
   c) an estimate of time needed for participation in the research and the place
   d) if applicable, location of the research activity
   e) how you will ensure confidentiality
   f) in a longitudinal study, note when and how you will contact subjects later
   g) participation is voluntary; nonparticipation will not affect evaluations of the subject

13. □ Consent form (if applicable)

14. □ Letter of approval for research from cooperating organizations or institutions (if applicable)

15. □ Data-gathering instruments

16. Anticipated dates for contact with subjects:
   - First Contact: 11/9/95
   - Last Contact: Estimated to be no later than 4/1/96

17. If applicable: anticipated date that identifiers will be removed from completed survey instruments and/or audio or visual tapes will be erased:
   - Anticipated to be no later than 12/31/96

18. Signature of Departmental Executive Officer: Daniel C. Latshaw
    - Date: 1/23/96
    - Department or Administrative Unit: Prof. Studies

19. Decision of the University Human Subjects Review Committee:
   - X Project Approved
   - □ Project Not Approved
   - □ No Action Required

   Patricia M. Keith
   - Name of Committee Chairperson
   - Date: 1/6-95
   - Signature of Committee Chairperson
APPENDIX C: PARTICIPANT BACKGROUND INFORMATION FORM
PARTICIPANT BACKGROUND INFORMATION

The information you provide on this form will be kept confidential. Please write your name in the "Name" area in the top right corner. Your name will be removed and your Code No. will be written on this form to insure confidentiality.

This information is for research purposes only.

Gender: ______ Female ______ Male

Age: __________________

Education: (check highest level)

______ Some high school
______ High school graduate
______ Some college
______ One-year technical degree
______ Two-year degree
______ Four-year degree
______ Some courses beyond four-year degree
______ Specialist or masters degree
______ Other (please explain)

Are you currently enrolled in any other classes away from Sears? ______ Yes ______ No

If "Yes," please explain:

---Please Continue---
Computer Experience

Please check the amount of previous computer experience you have from work, school, or volunteer situations:

- None
- Less than 6 months
- 6 months to 1 year
- More than 1 year

Are you currently gaining computer experience anywhere other than at Sears?

- Yes
- No

If "Yes," please explain:

Customer Service Experience

Please check the amount of previous customer service experience you have from work, school, or volunteer situations:

- None
- Less than 6 months
- 6 months to 1 year
- More than 1 year

Are you currently gaining customer service experience anywhere other than at Sears?

- Yes
- No

If "Yes," please explain:
APPENDIX D: LISTING OF PARTICIPANT COMMENTS
FROM THE PARTICIPANT BACKGROUND INFORMATION SHEETS
LISTING OF PARTICIPANT COMMENTS
FROM THE
PARTICIPANT BACKGROUND INFORMATION SHEET

Participants were asked the following question on the Participant Background Information sheet:

Are you currently gaining computer experience anywhere other than in this employment situation? If "Yes," please explain.

Following are the various answers provided by participants as explanations for their "Yes" answers:

Control Group

Home

Home

Home

Computer @ home - recently purchased

Home

Experimental Group

At home

At home and at mother's office.

home

I have a computer at home and use one at school.

Home.

I have a computer at home that I use every so often.
Participants were also asked the following question on the Participant Background Information sheet:

Are you currently gaining customer service experience anywhere other than in this employment situation? If "Yes," please explain.

Following are the various answers provided by participants as explanations for their "Yes" answers:

**Control Group**

- Own other business.
- Part-time night job
- I sell Beaus & Eros (lingerie & sensuality products) as a home party plan.
- I sell Avon & Tupperware.
- I am currently looking for a part-time job at a retail store.

**Experimental**

- I'm in the J.C. organization in our hometown. We work with the community.
- I work as a waitress at Drake University.
- I am a waitress.
APPENDIX E: MEASUREMENT # 1
Write your name in the Name area in the top right corner. Your name will be removed and your Code No. will be written on this form to insure confidentiality.

Please answer all the questions to the best of your ability.

1. Read the following statements and determine if they comply with Paragraph 5000 of the Sears Credit and Collection Policy and Procedures Manual. Place an X in the appropriate column.

<table>
<thead>
<tr>
<th>Does Comply</th>
<th>Doesn't Comply</th>
<th>Statements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>a. The Collections Correspondent calls for the second time this week, and the customer says, &quot;Look, I told you earlier this week, I just can't pay!&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b. The Collections Correspondent calls and says, &quot;Your daughter in college has an account with us that is $125 overdue. Do you think you could help her make payments on this account?&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c. The customer says, &quot;Look, it's seven in the morning, I've got to get to work. Call me later this afternoon.&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>d. The customer says, &quot;I've told you twice, don't call me at work anymore!&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>e. The Collections Correspondent says, &quot;Please ask Mrs. Murray to call Andy Moore. She can reach me at (telephone number).&quot;</td>
</tr>
</tbody>
</table>

2. Match the Collection Department with its Description by writing the number of the description in the space provided.

<table>
<thead>
<tr>
<th>Department</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Department 003</td>
<td>1. Accounts 150+ days delinquent</td>
</tr>
<tr>
<td>b. Department 001</td>
<td>2. Clerical</td>
</tr>
<tr>
<td>c. Department 005</td>
<td>3. Special Accounts</td>
</tr>
<tr>
<td>d. Department 002</td>
<td>4. Accounts 60-119 days delinquent</td>
</tr>
<tr>
<td>e. Department 007</td>
<td>5. Accounts 1-59 days delinquent</td>
</tr>
<tr>
<td>f. Department 004</td>
<td>6. Accounts 120-149 days delinquent</td>
</tr>
</tbody>
</table>
3. List each of the steps in the Eight Step Calling Pattern:

a. 1-- 

b. 2-- 

c. 3-- 

d. 4-- 

e. 5-- 

f. 6-- 

g. 7-- 

h. 8-- 

4. Listed below are the four types of amounts in the negotiation sequence. Identify which amount you should negotiate first by placing a "1" in front of it, which amount you should negotiate second by placing a "2" in front of it, which amount you should negotiate third by placing a "3" in front of it, and which amount you should negotiate fourth by placing a "4" in front of it.

a. ______ Determine how much the customer can pay—an amount more than the monthly payment plus arrangements for Now Due.

b. ______ Past Due amount plus arrangements for Now Due.

c. ______ Full monthly payment plus arrangements for Now Due.

d. ______ Now Due amount.

5. Fill in the correct release key to release a call in each of the following situations:

<table>
<thead>
<tr>
<th>Code</th>
<th>Situation</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Re-call, no cardholder (or authorized user) contact</td>
</tr>
<tr>
<td>b.</td>
<td>Cardholder Contact, payment arranged.</td>
</tr>
<tr>
<td>c.</td>
<td>Dead air.</td>
</tr>
<tr>
<td>d.</td>
<td>Cardholder Contact; no payment arranged due to service problem.</td>
</tr>
<tr>
<td>e.</td>
<td>No Cardholder Contact; customer wasn't home today.</td>
</tr>
<tr>
<td>f.</td>
<td>Cardholder Contact, no payment arranged due to bankruptcy.</td>
</tr>
<tr>
<td>g.</td>
<td>Wrong Party Contact, customer moved.</td>
</tr>
<tr>
<td>h.</td>
<td>Re-call, no Cardholder Contact; customer might be reached later today.</td>
</tr>
<tr>
<td>i.</td>
<td>No re-call to this customer for the rest of today.</td>
</tr>
</tbody>
</table>
6. RAVE is a customer service acronym which also applies to Collections. Provide the word which each letter in RAVE stands for and an example of each word.

a. "R" stands for ________________ 
   b. Give an example of applying "R" in a collections call: ________________

c. "A" stands for ________________ 
   d. Give an example of applying "A" in a collections call: ________________

e. "V" stands for ________________ 
   f. Give an example of applying "V" in a collections call: ________________

g. "E" stands for ________________ 
   h. Give an example of applying "E" in a collections call: ________________

7. Fill in the blank: The goals of a collection call are:

a. 1. ______________________________
   2. Find out the reason for the delinquency.
   3. Retain the customer's purchasing power.
   4. Protect our receivables by obtaining the Now Due.
   5. ______________________________

8. Listed below are abbreviated directives. In the space provided, write the translation of each complete directive.

a. CCB ATY: JAMES HENRY, 202-132-8900 ______________________________

b. CUST OOW 12/19, BTW 4/19, POE: MID-AMERICA PRODUCTS __________

c. SUP CWP COMPL ______________________________

d. UTD PMT 10/27 $100 VIA S ______________________________

e. UNEMP, VFA ______________________________
9. Fill in the action code or the meaning of the action code in the empty boxes identified by a letter:

<table>
<thead>
<tr>
<th>ACTION CODE</th>
<th>MEANING OF CODES</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Telephoned third party</td>
</tr>
<tr>
<td>b.</td>
<td>Re-call</td>
</tr>
<tr>
<td>c.</td>
<td>Telephoned customer at home; no payment.</td>
</tr>
<tr>
<td>28</td>
<td>d.</td>
</tr>
<tr>
<td>32</td>
<td>e.</td>
</tr>
<tr>
<td>f.</td>
<td>Telephoned customer at home; paid (recently).</td>
</tr>
<tr>
<td>30</td>
<td>g.</td>
</tr>
<tr>
<td>h.</td>
<td>Telephoned customer at home; left message with a person.</td>
</tr>
<tr>
<td>72</td>
<td>i.</td>
</tr>
<tr>
<td>j.</td>
<td>Telephoned customer at home; promised payment.</td>
</tr>
<tr>
<td>36</td>
<td>k.</td>
</tr>
<tr>
<td>l.</td>
<td>Refer to your manager/supervisor.</td>
</tr>
<tr>
<td>44</td>
<td>m.</td>
</tr>
<tr>
<td>n.</td>
<td>Refer to bankruptcy</td>
</tr>
</tbody>
</table>

Thank you for completing this evaluation.
APPENDIX F: MEASUREMENT # 2
Name ________________________________  
Code No. ________________________________

MEASUREMENT # 2

Write your name in the Name area in the top right corner. Your name will be removed and your Code No. will be written on this form to insure confidentiality.

Sign into training queue H236C5 as you did during Training Class. Then answer the questions to the best of your ability. You have a maximum of 15 minutes to complete both Part A and Part B.

Part A—Refer to Account Number 017332364384 and answer the following questions.

1. What type of account does our customer have? ________________________________

2. What are the terms for this account? ________________________________

3. What is the behavioral score? ________________________________

4. How many notes are on the N2 screen? ________________________________

5. Referring to question # 4, how many of these notes are temporary notes? ______

6. Referring to question # 4, how many of these notes are regular notes? ______

7. What is the balance limit? ________________________________

8. What is the YTD finance charge? ________________________________

9. What is the LYA finance charge? ________________________________

10. How many times was our customer 30 days past due in the past 24 months? ______

11. Did our customer make a payment in July 1995? ________________________________

12. Referring to question # 11, if yes, what was the date? ________________________________

13. Referring to question #11, if yes, what was the amount of the payment? ______

14. What is our customer's due date? ________________________________

15. Does our customer have Capp insurance? ________________________________

16. What were the purchases our customer made in October 1995? ________________________________

-1-
Part A—Continued

17. Referring to question #16, what was the total amount of the purchases? __________

18. What is the address our customer's statement is being mailed to? ____________________________

19. What is the last purchase date? ________________________________

Part B—Refer to Account Number 0084014301950 and answer the following questions.

20. What is the date our customer opened this account? ________________________________

21. What type of account does our customer have? ________________________________

22. What is the bill date for this account? ________________________________

23. What cycle is this account? ________________________________

24. The run date on the calendar for this cycle is ________________________________

25. When did the customer make the last purchase? ________________________________

26. When did the customer make the last payment? ________________________________

27. What was the amount of the last payment? ________________________________

28. What is the behavioral score? ________________________________

29. Are we getting return mail? ________________________________

30. Where do you check for return mail? ________________________________

31. What is the customer's balance limit? ________________________________

32. What is our customer's balance right now on the account? ________________________________

33. What was the balance showing on our customer's last statement? ________________________________

34. What is our customer's social security number? ________________________________
APPENDIX G: MEASUREMENT # 3
During this evaluation, you will be talking with a "simulated" customer—that is, with a person who is playing the role of the customer.

Although the computer automatic dialer will not be used in this situation, assume this is a typical collection call with a real customer.

Pull up Account Number ____________________________ on your screen and dial ________________ on your telephone. As soon as the person says "Hello," began speaking as you would in a typical, computer-dialed call. Identify yourself by your first name.

Do not update the computer information.
MEASUREMENT # 3

No. | Did the Collections Correspondent Effectively Perform the Following:                                                                 | NO | YES |
---|-----------------------------------------------------------------------------------------------------------------------------------|----|-----|
1. | Greet the answerer pleasantly (meaning friendly, as if smiling, but not sugary)                                                    |    |     |
2. | Identify self by name and Company                                                                                                |    |     |
3. | Verify answerer is cardholder or authorized user                                                                               |    |     |
4. | Request Now Due payment today                                                                                                |    |     |
5. | Pause and listen to customer responses                                                                                          |    |     |
6. | Obtain or update Reason For Delinquency                                                                                         |    |     |
7. | Negotiate for Now Due or Up To Date Arrangements                                                                              |    |     |
8. | Use an empathy statement                                                                                                         |    |     |
9. | Use a positive phrase (meaning a benefit or motivational phrase)                                                                |    |     |
10.| Repeat the details of the arrangement including the amount promised, the date to be paid, the method of payment, and agreement to bring the account up to date. |    |     |
11.| Verify address and social security number by using restatement, renumbering, and/or respelling as appropriate.                   |    |     |
12.| Verify place of employment by using restatement, renumbering, and/or respelling as appropriate.                                 |    |     |
13.| Thank the customer.                                                                                                              |    |     |
14.| Sound professional (meaning succinct, didn't interrupt, asked good questions, not abrasive or defensive)                         |    |     |

Evaluator Name and Date ________________________________________________
APPENDIX H: MEASUREMENT # 4
This form is not completed by the participant. The data inserted at the bottom of this form was gathered from a company computer-generated performance report four weeks after the completion of the training program.

Data from columns 8, 10, and 13 of the report were used. The following information describes the columns:

<table>
<thead>
<tr>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Column 8</td>
<td>Number of cardholder (or authorized user) contacts per hour</td>
</tr>
<tr>
<td>Column 10</td>
<td>Percent of cardholder contacts which PPY (promised to pay)</td>
</tr>
<tr>
<td>Column 13</td>
<td>Percent of PPY (promised to pay) where money was received</td>
</tr>
</tbody>
</table>

This participant's scores:  

<table>
<thead>
<tr>
<th>Column</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Column 8</td>
<td></td>
</tr>
<tr>
<td>Column 10</td>
<td></td>
</tr>
<tr>
<td>Column 13</td>
<td></td>
</tr>
</tbody>
</table>
REFERENCES


BIOGRAPHICAL SKETCH

AUTHOR: Darlene Austin Bradner

DEGREES AWARDED
Mankato State University, Mankato, Minnesota
Bachelor of Science, Magna Cum Laude, Business Education, 1970
Master of Science, Business Education, 1971

PROFESSIONAL EXPERIENCE
Coordinator/Consultant of Adult Education, Des Moines Area Community College, 1974 - 1978.

PROFESSIONAL AWARDS
National Training Award for Contribution to Employer, Presented by American Society for Training and Development.
Outstanding Member Award, Presented by Central Iowa Chapter of American Society for Training and Development.

RECENT PROFESSIONAL PRESENTATIONS
American Association for Adult and Continuing Education (AAACE) Annual Conference, 1994, 1995, and selected to present at the upcoming 1996 Conference.
Iowa Association of Lifelong Learning (IALL) Annual Conference, 1994, 1995, and selected to present at the upcoming 1996 Conference.