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THE EVALUATION OF AN INDEPENDENT STUDY KIT
TO TRAIN HOME CARE WORKERS

BY

LOIS ANN VIKSE

A thesis submitted
in partial fulfillment of the requirement for the
degree Master of Science, Major in
the College of Home Economics
South Dakota State University
1980

THE EVALUATION OF AN INDEPENDENT STUDY KIT
TO TRAIN HOME CARE WORKERS

This thesis is approved as a creditable and independent investigation by a candidate for the degree, Master of Science, and is acceptable for meeting the thesis requirements for this degree. Acceptance of this thesis does not imply that the conclusions reached by the candidate are necessarily the conclusions of the major department.

Thesis Advisor

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Dean, College of Home Economics

Date

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LAV

THE EVALUATION OF AN INDEPENDENT STUDY KIT
TO TRAIN HOME CARE WORKERS

Abstract

LOIS ANN VIKSE

Under the supervision of Dr. Edna Page Anderson

A descriptive study was done to assess the effectiveness of an independent study kit to train Home Care workers in basic skills, identify procedures essential to successful use of independent study and to document problems occurring with its use. A two part instrument was developed, based upon guidelines of the Model Curriculum and Training Guide developed by the National Council of Homemaker-Home Health Aide Services, to assess changes in attitude and knowledge following the use of the independent study training program.

Twenty-seven subjects completed the training program and the pre and posttests. Results were analyzed using the paired t-test to determine the significance ($P < .05$) of the changes. Significant ($P < .05$) changes in attitude and knowledge were not attributable to the use of the training program. Multiple regression between the changed scores and the independent variables was done to explain the findings. A group of sixteen variables were found to explain changes in scores on the attitude test. On the cognitive test none of the independent variables made a significant contribution to changes in scores.

The majority of the subjects were thirty five years of age or older with moderate to large amounts of personal experiences related to Home Care. Overall, attitudes toward the training program were favorable.

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CHAPTER I

INTRODUCTION

Home Care services developed from the socio-economic and cultural conditions of the world in which they have functioned, with emphasis changing as needs changed. In 1903, the services were begun in the United States. At that time, the need was for "Visiting Cleaners" to provide nursing services to the poor. Housekeeping services were provided when women with children were temporarily ill or incapacitated.

During the depression and the time of the Workers Progress Administration (WPA), emphasis was placed on employment needs rather than on the client's need for services. There were 38,000 homemakers employed in the United States during the WPA era.

Home Care services developed and became more organized as a result of the formation of the National Council for Homemaker Services in 1963 and the passage of Social Security and Medicare laws. The latter provided financial support for use of Home Care services by ill and elderly and their need to maintain independence (Somers, and Moore, 1976).

Ideally, the Home Care worker is a "mature," responsible, humanistically-oriented homemaker who has raised a family. Frequently, personal qualifications are more important than formal education (Somers, and Moore, 1976; Terlizzi, 1976). Physical strength is needed to care for invalid persons. The aide needs emotional stability to deal with seizures, terminal illness, the aging process, and other crisis

situations. Integrity, warmth and understanding enable the worker to accept the behavior and feelings of others. Personal care and home-making experience is helpful. The only educational prerequisite for employment is the ability to read and write.

The Home Care worker is a member of a health care team consisting of other aides, social workers, health professionals, therapists, and/or dieticians (Terlizzi, 1976). The worker is employed and supervised by social and health service agencies that are responsible to the client for the services provided. The majority of the workers are employed part time, with scheduling being either regular or occasional (Terlizzi, 1976). Although the Home Care worker does follow a prescribed "plan of work," the nature of the work requires an ability to work with independence and self-direction when carrying out day to day activities.

Significance Of Problem

The Home Care worker provides intermittent assistance that enables families to remain intact during and after a crisis. Additional support services are provided so that individuals can maintain independent living when a health or social problem occurs and after specialized medical care (Somers, and Moore, 1976).

Home Care services are divided into four areas---homemaking, personal care, preventive services and services to free professionals of non-professional tasks (Terlizzi, 1976). The services included in the first area, homemaking, range from simple cleaning, planning and shopping tasks to the complete planning and preparation of meals, including special diets and help with budgeting or managing family

finances. Personal services the Home Care worker provides include bathing, grooming, assistance with ambulation and range of motion exercises. Under special supervision, the Home Care worker assists with physical, speech, or occupational therapy routine (Soyka, 1976). Another area of services provided by the Home Care worker is preventive services including teaching adaptive living skills and giving emotional support that helps the client cope with disability. In the final area of tasks, the emphasis is on freeing the professional from the necessity of providing non-professional tasks. Aides act as a liason between the client and professional health and social worker, reporting important changes in the client's condition to the supervisor. The health care team is helped in assessing changes in the client's plan of care.

Home Care services are being recognized as an alternative to institutionalization. With the rapidly rising costs of hospitalization and institutionalization, hospital utilization boards are pressured to find safe alternatives for persons who need intermittent assistance but who do not require regular round the clock care (Somers, and Moore, 1976). For post-hospitalized individuals needing less than twenty hours of assistance weekly, the relatively low hourly cost of in home assistance is more economical than the cost of institutionalization (Morse, 1978; Somers, and Moore, 1976). Some insurance companies are gradually including homemaker services in their insurance plans based upon the Medicare model (Somers, and Moore, 1976). The American Cancer society supports Home Care services for cancer patients. The crucial test of the economics of Home Care services is the appropriateness of the care to the needs of the

individual being served (Morse, 1978; Somers, and Moore, 1976).

In 1975, there were 22.4 million persons in the United States sixty-five and over. By 1985, the figure is expected to reach 26.7 million (Somers, and Moore, 1976). The rise in the elderly population places an increased demand on hospitals, other institutions and public service agencies for the delivery of health care. The elderly individual's inability to gain strength and independence is often more a result of mental attitude than physical situation. Home care services enable the elderly who have arthritis, heart conditions, or who are in need of assistance with personal and household tasks, to live independently in their homes where most of them prefer to live. The National Council for Homemaker-Home Health Aide Services (NCHHHA) estimates the need for approximately one aide per one thousand persons sixty-five and over (Somers and Moore, 1976).

Birth defects, early childhood handicaps, and child abuse are societal conditions that call for Home Care workers. Experts in child development agree that wholesome psychological growth depends upon security and a warm and continuous relationship with nurturing parents during the early years of life (Soyka, 1976). The Home Care services provide assistance with the care and management of the handicapped child and the emotional support that the family members need. In child abuse cases, the Home Care worker can provide the needed parenting model and give both children and parents the feeling that they are cared for (Soyka, 1976). The NCHHHA estimates that one aide is needed for every ten thousand children (Soyka, 1976).

Statement Of Problem

The employment demands are extreme for a position where the only formal educational requirement for employment is the ability to read and write. Families and persons being served are especially vulnerable and need workers with a broad base of skills. The Home Care worker's functioning as a member of the health or welfare team is critical to the delivery of quality service. Training is integral to the delivery of services but is complicated by the nature of the Home Care Industry and the unique characteristics of Home Care employees (Hanson, et al., 1980).

Medicare laws require that Home Care aides be trained before they provide financial assistance for the delivery of services (Hanson, et al., 1980). The Home Care Industry is beginning to be monitored and regulated by a variety of state and federal agencies, with the NCHHHA having an accreditation program describing acceptable training (Hanson, et al., 1980). In spite of these training demands, training is largely patched together with the length and content of training varying between states and within employing agencies (Hanson, et al., 1980). Training is further complicated by the rapid turnover of workers characteristic of Home Care services as well as the unique set of strengths and training needs with which each individual begins training. Institutions training professionals do not care to train paraprofessionals. Vocational technical institutes and two year colleges are beginning to respond with training programs ranging from forty to 300 hours in length (Hanson, et al., 1980).

There is a need for training programs where the characteristics and needs of the individual to be trained affect the curriculum. A standard

training program will not fit the training needs of all employees. The training program needs to be flexible yet precise enough to include lacking experience, while avoiding the costly repetition of knowledge and skills present in the employee (Hanson, et al., 1980).

Independent study programs may be a realistic way to meet the training demands characteristic of Home Care services. In independent study, course content is developed based upon stated objectives, learners actively participate in the learning process, pace for completion of the program is according to personal needs, and immediate feedback is received on performance.

While training of Home Care aides through independent study seems to offer considerable potential in helping to ease the existing training complications, this method of training and its effects have not been investigated. The objectives of this study were to:

1. Assess gains in knowledge after use of an independent study kit to provide orientation training.
2. Assess changes in Home Care workers' attitude towards employment responsibilities after use of an independent study kit.
3. Identify procedures and guidelines essential to successful use of independent study.
4. Document problems occurring with the use of independent study and to suggest possible solutions.

Criterion-Referenced Test. Any test that is interpreted based on the behavior or performance demonstrated by the learner only (Cavallari, 1973).

DEFINITION OF TERMS

Home Care Services. The umbrella term for services provided by the Home Care worker. The services are classified as homemaking, health care and/or preventive services. Also, the services of the Home Care worker free professionals from non-professional tasks.

Home Care Workers. The term for paraprofessionals who earn their wages in the home of those needing services. They provide homemaking, health care, and/or preventive services to persons needing intermittent assistance. The services are either on a temporary or long term basis.

Client. The person(s) receiving Home Care services.

Homemaker-Home Health Aide Individualized Learning Units. A self-contained training program consisting of an eight chapter manual with corresponding tapes, a tape recorder, and a testing manual. It provides Home Care workers with an orientation in basic skills.

National Council for Homemaker Home Health Aide Services (NCHHHA). A council organized in 1963 to develop Home Care services nationally, to approve agencies, and for accreditation purposes.

Independent Study. One method for individualizing instruction. Independent study programs range from segments of coursework utilizing independent study to whole courses completed independently.

Attitude. "A relatively enduring system of affective evaluation reactions based upon and reflecting the evaluative concepts or beliefs which have been learned about the characteristics of a social object or class of social objects" (Shaw and Wright, 1967, p. 10).

Criterion-Referenced Measurement. A method of interpreting the results of learner achievement. Achievement is interpreted in terms of the behavior or performance demonstrated by the learner without reference to the level of performance demonstrated by other members of the group (Gronlund, 1973).

Criterion-Referenced Test. Any test that is interpreted based on the behavior or performance demonstrated by the learner only (Gronlund, 1973).

CHAPTER II

LITERATURE REVIEW

The purpose of the study was to evaluate an independent study kit developed to provide orientation training for the Home Care Aide. Since the focus of the study was the evaluation of the independent study kit, the literature reviewed focused on 1) independent study as a method of learning and 2) training which utilized independent study. To assure the most current information, the review of literature was limited to research from the past ten years.

Independent Study As A Method Of Learning

Societal and educational factors, including the high cost of public education, increased research of the learning process, mobility, and the knowledge explosion, necessitate continuous learning throughout the life process. The development of an intrinsic motivation for continued education and an understanding of the process of learning is more important for the development of the individual learner than the accumulation of factual knowledge and skills (Hanney, 1978; Hein, 1978). The need for continuous education requires an educational approach that focuses on the individual learner, encouraging creative inquiry, personal responsibility for learning, independence, and self-development (Hein, 1978). Individualized instruction is the generic term for the procedure for meeting these educational demands.

Included in individualized instruction is the scheduling of courses and varying of instructional techniques to account for individual needs,

providing remedial help to those who do not understand a concept and programmed instruction. Independent study is one way to individualize instruction.

The elements of independent study packages. The independent study package usually consists of three sections -- objectives, learning activities and evaluation. Objectives define what the learner is to accomplish. Learning activities provide opportunities for the learner to practice and use newly acquired knowledge. The learner is evaluated on mastery of objectives.

The development of an independent study package is based upon a well defined set of objectives, behaviors, and/or skills which the learner will acquire or achieve during the unit. The objectives, written in behavioral terms, provide students with a knowledge of exactly what is expected of them and how mastery will be recognized (Hein, 1978; Kuzsman, MacIsaac, 1975). The unit is divided into short segments, sequenced with one major concept or skill building upon the previously learned concept (Hein, 1978). The development of the package, based upon defined objectives and sequenced to build upon previously mastered concepts, builds quality into the instructional program.

A second provision of independent study programs is learning activities designed to accommodate individual differences in achievement, rate, style and mode of learning. A variety of activities should be developed using the multi-media approach. Learners are allowed to choose the activities they will complete, based upon their familiarity with the topic and their style of learning. Additional activities, providing

for in-depth study, should be prescribed (Kuzsman, and MacIsaac, 1975).

Thirdly, independent study programs use evaluative procedures to measure progress in terms of acquired skills and behaviors rather than completed tasks (Hein, 1978). The majority of independent study packages incorporate three evaluative procedures -- pretests, self-correcting quizzes and posttests. Pretesting is diagnostic, allowing the instructor to identify entry level abilities and modify the curriculum according to the students' needs (Gronlund, 1973). When accompanied by posttests, pretests also provide a base for measuring learning gains (Gronlund, 1973). Self-correcting quizzes provide for formative evaluation, enabling the student and instructor to assess student progress and individual needs prior to completion of the program. The level of mastery of objectives is assessed through posttesting.

Limitations and problems in the development of independent study programs. A major problem is quality control. Machett (1978) concluded that not all subjects are adaptable to the independent study format. Kuzsman and MacIsaac (1975) concluded that a large proportion of poor individualized instruction is a result of poor planning, adding that the most prevalent limitation of learning activities was the development of activities that did not correspond to the intellectual level of the objective, with the activity being either too broad or too vague.

Researchers have found two basic limitations to pretesting, the first being the practice effect in which students try to recall pretest answers when taking the posttest (Gabb, 1978; McMullen, 1974). A second limitation is the lack of feedback since students are not

always given pretest results (McMullen, 1974).

Independent study and mastery learning. Independent study packages are developed for student mastery of concepts. Advocates of Mastery Learning state that the degree of learning is a function of the ratio of the time spent in learning to the time needed (Block, 1971). Carroll's (Block, 1971, p. 6) complete model for Mastery Learning is summarized in the following figure.

$$\text{Degree of learning} = f. \quad \begin{array}{l} 1. \text{ time allowed} \quad 2. \text{ perseverance} \\ 3. \text{ aptitude} \quad 4. \text{ quality of instruction} \\ 5. \text{ ability to understand instruction} \end{array}$$

f. refers to "is a function of."

Figure 1

Model for Mastery Learning Theory

The self-pacing characteristic of independent study is conducive to mastery learning. Theoretically, students are allowed to work at their own pace and repeat content as needed, allowing them to concentrate on reaching mastery rather than keeping up with the class.

Researchers do not totally agree on the principle of self-pacing being conducive to mastery learning. Cormier, et al., (1976) used independent study packages with a number of treatment procedures: self-pacing individual study, the written package utilizing group study, audio package utilizing group study and lecture method. They concluded that student freedom to process the package at their own rate combined with opportunity to review content were critical to obtaining satisfactory result with the self-pacing individual study treatment. Gabb (1978) compared independent study with lecture using three samples of students

who had experienced very little academic success. He concluded that self-pacing, allowing for variation in academic preparation, was a major contributor to superior gains ranging from 25.6 ± 1.6 to 29.6 ± 1.6 . (Gabb, 1978) also surveyed subjects to assess components of independent study contributing to enjoyment and effectiveness with self-pacing being rated as a major factor in both enjoyment and effectiveness.

Results of studies utilizing the Personalized System of Instruction (PSI)* format are contrary to the findings of Gabb (1978) and Cormier, et al. (1976). A high proportion of incompletes, failures, and a low proportion of mastery performance were found by Ainsworth (1979) and Semb et al., (1979) in studies of psychology students using the PSI format. Ainsworth (1979) concluded that the students themselves were a major contributor to this failure since they neither provided necessary perseverance nor had the reading, writing and speaking ability integral to success in self-paced courses. Semb et al., (1979) concluded that delayed student work patterns or procrastination was a contributor to this failure.

Active participation in the learning process. Advocates of operant learning theory contend that the individual first makes a response and then experiences consequences for the response (Hetherington and Parke, 1979). With independent study, the response is active participation in the learning process with the consequence being the satisfaction of achievement.

*Characteristics of the PSI format is student self-pacing, testing over short assignments with immediate feedback on performance, regular access to instructor and/or student assistant, and freedom from class attendance.

McMullen (1974) studied three individualized instruction strategies, serial mastery, pretesting and active participation in the learning process. The researcher concluded that cognitive stress, resulting from the mental demands of active participation in the learning process, led to greater short and long-term academic achievement since the mind is required to interpret and process data.

The changed role of the instructor. For the instructor, the independent study package becomes a management tool, enabling him/her to take on more facilitative roles. The instructor spends more time assessing the learning process of individual students and reinforcing more effective learning techniques. The instructor also devotes more time to evaluative and corrective feedback. Semb et al. (1979) stated that early performance predicts later performances and suggest that it is the instructor's responsibility to diagnose a student's early performance.

Training Which Utilized Independent Study

In reviewing the use of independent study to train paraprofessionals, it is necessary to consider the following:

- (1) The nature of paraprofessionals and their training needs.
- (2) Training programs that have utilized independent study.
- (3) Characteristics of independent study conducive to training Home Care workers.

The nature of paraprofessionals and their training needs. The paraprofessional is largely responsible for the "hands on" performance of tasks, freeing the professional to perform management and specialized tasks. The nature of the paraprofessional's employment necessitates

training programs that focus on specific and concrete tasks to be performed on the job. Stokes and Keys (1978) stress the importance of having the initial focus of the training program be the conceptual understanding of the skill. Vague programs presuppose an understanding of skills that the paraprofessional may not possess.

The paraprofessional needs to incorporate new procedures into his/her repertoire of behaviors. This necessitates opportunities to practice procedures in a natural setting (Ahmann and Glock, 1971). Integral to his practice-assessment procedure is evaluative feedback, helping the trainees develop confidence in their ability to use the newly acquired skill or procedure (Stokes and Keys, 1978). Assessment methods are largely subjective.

Another training need involves sequencing. The training program needs to be sequenced so that one skill builds upon a previously acquired skill.

The training of paraprofessionals in "helping" professions to deliver personal care usually follows one of two models, the medical-custodial model or the interpersonal model. The medical-custodial model is most frequently used. Paraprofessionals are trained in the "how-to's" of personal care, with programs omitting the development of attitudes necessary for the paraprofessional to cope with and to help the impaired cope with the disability (Ackerman and Bradshaw, 1978). A training program based on the interpersonal model maintains that improvement of interpersonal skills will enhance the quality of personal care given to the disabled, especially when the impairments require a minimum of skilled techniques. The training program based on the interpersonal

model emphasizes the development of attitudes, values and behaviors exemplifying the belief that the impaired individual is a whole person capable of functioning at an optimal level in the face of disability (Ackerman and Bradshaw, 1978). Grayson et al. (1977, p. 908), proponents of training programs based on the interpersonal model, stated that a lack of empathy for the disabled is a major source of patient discontent and that:

Interpersonal skills instruction should prepare the (aide) to respond with flexibility and creativity to the diverse individuals and situations they will encounter and practice. Training in this area required that the (aid.) explore their own feelings and attitudes and determine how these color their perceptions of patient behavior.

Training programs utilizing independent study. Because independent study programs can be adapted to an individual trainees' strengths and weaknesses, independent study can be utilized in a variety of training settings. By omitting certain segments and combining programs, highly specialized training programs can be made. Independent study has been used extensively for the conceptualization of basic skills and for continuing education for personal care paraprofessionals and professionals.

DiMattia and Zimmer (1972) trained paraprofessionals in counseling skills using an independent study programmed text treatment and a video-taped simulated counseling session. Subjects using the programmed text were significantly more accurate in identifying depression than subjects using the simulated experience. The researchers attributed this to active participation in learning, characteristic of the programmed text treatment. Although both treatments taught the same

concepts, subjects using the programmed text were forced to interact with the learning medium through reading and reacting to each frame. Receiving immediate feedback to responses with summary frames helped trainees synthesize material. The passive video-taped medium was conducive to ignoring emphasized cues while focusing on other stimuli in the room.

Saltmarsh (1973) did an experimental study training counselors in empathy skills using an independent study programmed text treatment and a video-tape treatment. Subjects using the independent study text scored significantly higher on the Michigan State Affective Sensitivity Scale than those using the video-tape treatment. The researcher attributed this to the objectives being written to give the student specific directions and provide a knowledge of skills they were required to conceptualize. Also, higher scores were attributed to the inclusion of practice frames characteristic of the programmed text treatment. Saltmarsh's (1973) use of the independent study program with additional populations has consistently produced high achievement.

Cormier, et al. (1976) did a number of studies in which independent study and variations were used to train for the development of counseling skills. Data from the phase using the independent study treatment and the traditional lecture treatment revealed a higher posttest performance for the independent study group with the performance increasing on the retention test for this treatment. Retention decreased for the lecture group. Opportunity to process the independent study package at the learner's own rate with chances for review as needed was deemed the

critical factor. In later studies (Cormier, et al., 1976), various independent study programs were used, along with the traditional lecture treatment, in a group setting. Although each student completed the independent study program individually, students were not allowed to process the skills in a self-paced manner or to review the material. Scores were not significantly different in the various treatments for the posttest or retention test. The researchers concluded that the results were related to the elimination of self-pacing and the continual access to material which accommodates review of difficult components.

Another area in which independent study has been used is continuing education. Matchett (1978) studied different effects of offering a continuing education course by independent study and by a seminar method. The researcher pointed out that although independent study did not offer speaker interaction with audience through questions and answers as a seminar did, the quality of presentation was consistent and travel expenses were eliminated. The researcher concluded that in order to have a comprehensive continuing education program, both methods should complement and supplement each other

Training programs that have utilized independent study. One factor to consider is the cost of the training program. When assessing cost, the cost of software (persons facilitating the training program) and hardware (audio-visual equipment, textbooks and audio-visuals) needed for training should be in proportion to the wages of the trainees (Eigan, 1978). Independent study packages are usually inexpensive to develop, easy to upgrade, and require a minimum cost for maintenance. An additional benefit is the elimination of travel expenses.

Characteristics of independent study conducive to training Home Care workers. Home Care workers enter the profession with a range of personal and employment experiences. One extreme is the individual who has just graduated from high school with no prior work and/or home care experience. At the other extreme is the individual who enters home care employment after some postsecondary educational background. With independent study, pretesting is diagnostic, assessing the worker's training needs. For the employee with a large variety of experience, certain segments can be omitted. Additional learning activities can be provided for the individual with few experiences.

There is a rapid turnover of employees, with Medicare laws requiring that only trained individuals care for Medicare recipients. With independent study, the training program can begin immediately after the worker is hired. Also, even though the training program is adapted to individual needs, independent study assures consistent quality of training each time an employee is trained.

Summarization Of Reviewed Literature

Certain inferences and conclusions can be drawn from the literature reviewed here:

- (1) Independent study packages are developed based upon principles conducive to quality educational programs, including:
 - (a) A set of carefully delineated behavioral objectives.
 - (b) A variety of learning activities to reinforce objectives, while accomodating individual learning styles and needs.
 - (c) Evaluative procedures that assist in assessing individual needs, diagnosing learning problems, and the mastery of objectives.

- (2) Independent study can be an effective way to train paraprofessionals including Home Care workers for several reasons:
- (a) The trainee is aware of what s/he is to accomplish when being trained.
 - (b) The program accomodates individual needs.
 - (c) The program can be self-paced according to the trainees' needs.
 - (d) The trainee actively participates in the training program.
 - (e) The program is cost effective.

CHAPTER III

METHODOLOGY

Various methods have been used to train Home Care workers. However, prior to the present study, independent study had not been used for training. The purpose of the study was to evaluate the effectiveness of using an independent study kit which was developed for orientation training of Home Care workers. Assessment was made of changes in trainee attitudes and knowledge as measured by the gain in scores from pretest to posttest. Collection of additional data enabled further description of the respondents and some of the interactive processes occurring between the training and the subjects.

The Independent Study Kit

An independent study kit was the mechanism utilized to train Home Care aides in basic skills. The independent study kit consisted of a manual with corresponding tapes, a tape recorder, and a suitcase to hold the material. Each of the eight chapters of the manual focused on a different area of home care. Chapter topics were: agency policies, home management, nutrition, meal management, aging, families in crisis, physiology and personal care. The manual consisted of information to be read, with the eight tapes being a verbatim replication of the script in the manual. Cartoon illustrations in the manual served to reinforce chapter content.

General instructional objectives for each chapter were written based upon the Model Curriculum and Training Guide developed by the

National Council for Homemaker-Home Health Aide Services, Inc. (1978). Professionals in each subject matter area were then consulted to delineate specific learning tasks. Affective, cognitive, and psychomotor behavioral objectives were included, with cognitive objectives limited to the knowledge, comprehension and application levels.

Chapter content was developed by subject specialists. For example, the chapter on agency policies was developed by a state agency supervisor and the chapter on home management was developed by a management specialist.

With the exception of chapter six, each chapter was edited by the following four persons: the project coordinator, a journalist, a professional from the subject matter area, and a practicing Home Care aide. The project coordinator's editing was done to insure a consistent style of writing between chapters and to verify that the objectives of the program were met. Journalistic editing was for grammatical errors and consistency of writing style. Subject area specialists were instructed to concentrate on the accuracy of the material, and the Home Care aide gave feedback on usability. All editors provided recommendations on the level of vocabulary and presentation of material to insure that the material would correspond to the reading abilities of the aide while capturing and maintaining his/her interest. Due to time limitations, Chapter Six, "The Family Unit as a Support System" was not edited by a Home Care aide.

In chapters two through eight, a variety of learning activities were included to provide opportunities for the aide to clarify values

and to apply and reinforce the concepts taught in the preceding material. These exercises included the identification of the trainee's standards for cleanliness and use of personal resources, use of the decision making process, case studies in meal planning and family crisis and the identification of attitudes toward the aging process and elderly. The specialists who wrote the individual chapters provided the learning activities.

The project coordinator developed a table of specifications based on the subject matter content the trainee was expected to learn. The table was used to construct self-testing exercises for chapters two through eight. The self-testing exercises were designed to assist the trainee and supervisor in evaluating the trainee's progress and to assess the ongoing effectiveness of the training program. Answers to the self-testing exercises and explanations of questions were put on the tapes, providing the trainee with immediate feedback on his/her progress.

Design

Designs considered for the study included alternate forms for a pre and posttest and using the same instrument for the pre and posttest. The same instrument for pre and posttest was chosen because of its greater reliability as an indicator of gain scores. To obtain descriptive data, a survey-questionnaire was developed to accompany the posttest. Limitations to the chosen design were considered and are discussed later.

Population And Sampling

The sample consisted of persons seeking employment as Home Care

aides and having no prior training. The South Dakota Department of Social Services and the Minnesota Department of Welfare and/or Public Health provided subjects for the study. All subjects from South Dakota had been hired within a month prior to participation in the study. Subjects from the Minnesota agencies were untrained aides hired within the year. Time and the limited number of subjects did not permit the use of a scientific random sample. Also, in compliance with the administrative decisions of the participating agencies, all trainees were required to participate in the training program before being employed with the agency. Limitations resulting from the sampling were considered in the interpretation of the findings.

Operational Definitions

To understand the scope of the study, two variables must be defined. They are "attitude" and "criterion-referenced" testing.

Attitude. Shaw and Wright (1967) hypothesized that the construct attitude is one variable invoked to account for consistency in social behavior. The researchers believed that "if the attitude of a person toward a given object, or class of objects, is known, it can be used in conjunction with situational and other dispositional variables to predict and explain reactions of the person to that class of objects."

Formal definitions of the term attitude vary widely. Traditionally, attitude is conceptualized as consisting of three components--an affective, a cognitive, and a behavioral aspect (Shaw, and Wright, 1967). Recent researchers reject this notion in favor of the belief that the traditional affective component constitutes the attitude, with the

cognitive component providing the evaluative basis, and that the attitude predisposes the individual to act in a given way toward the object (Shaw and Wright, 1967).

Basic to the use of attitudes to explain and predict the person's reactions toward objects is an understanding of the characteristics of attitudes. According to Shaw and Wright (1967, pp. 6-9) attitudes are said to possess the following characteristics:

- (1) Attitudes are based upon evaluative concepts regarding characteristics of the referent object and give rise to motivated behavior."
- (2) They vary in quality and intensity on a continuum from positive to neutral to negative.
- (3) They are learned rather than being innate or resulting from maturation and development.
- (4) They have specific social referents or classes and possess varying degrees of interrelatedness.
- (5) They are relatively stable and enduring but can be changed and/or modified.

The attitude questionnaire is a compilation of statements at the positive-negative dimension, with the statements based upon the assumption that the evaluations of persons construction the scale correspond to those of the individuals whose attitudes are being measured (Shaw and Wright, 1967). The attitude scale measures positive-negative predispositions of behavior.

For purposes of this study, attitude is defined as:

a relatively enduring system of affective evaluative reactions based upon and reflecting the evaluative concepts or beliefs which have been learned about the characteristics of a social object or class of social objects (Shaw and Wright, 1967, p. 10).

Attitudes are drive-producing responses that give rise to overt

behavior. In this study attitudes were assessed by statements about life processes as they relate to the care of the elderly and/or disabled within the social services organization.

Criterion-referenced tests. Criterion-referenced measurement refers to a method of interpreting the results of learner achievement (Gronlund, 1973). Achievement is interpreted in terms of the behavior or performance demonstrated by the individual learner rather than other members of the group (Gronlund, 1973).

The nature of criterion measurement necessitates test items directed toward obtaining measures of achievement expressed in terms of learner performance on clearly defined educational tasks (Gronlund, 1973).

Gronlund (1973) states that test construction is based on these principles:

- (1) A delimited domain of learning tasks is clearly defined with objectives precisely stated in behavioral terms.
- (2) Appropriate standards of performance, based upon mastery of minimum essentials, are specified.
- (3) An adequate sampling of student performance within each specified area, with items reflecting the behaviors specified in the objectives.

The test, called a criterion-referenced test, is developed based upon a well delineated plan. To assure an adequate sampling of the stated objectives, a table of specifications is developed. The table includes a detailed breakdown of each general objective, with the number of items necessary to adequately assess mastery of the specific objective stated. The developed items range from easy to difficult. Through the use of this technique, testers obtain a more accurate description of student performance based upon the mastery of specific objectives rather than in terms of total test score (Gronlund, 1973).

The test is constructed for one of two levels of learning, the mastery learning test or the developmental learning test. The following table (Gronlund, 1973) describes the distinguishing characteristics.

Table 1

Comparison of Criterion-Referenced Mastery Testing
and Testing at the Developmental Level

Criterion-Referenced Mastery Testing	Testing at Developmental Level
Measures mastery of minimum essentials, including basic skills and knowledge that is a pre-requisite for further learning.	Measures the degree of achievement beyond mere mastery, including higher objectives.
Objectives and test items are limited to instructional outcomes that can be fully mastered.	Objectives and test items are directed toward goals that can never be fully achieved.
Item difficulty matches level of stated objectives with standard performance of mastery arbitrarily set at 85%. Adjustment of the set standard is based upon tester experience.	A range of item difficulty is desirable, with performance standards based upon norm-referenced interpretations.

For purposes of this study, a criterion-referenced instrument was developed to test the cognitive domain or knowledge gained by Home Care workers. Item complexity was limited to the knowledge, comprehension and application level. The instrument will be discussed later.

Variables

The independent variables in the study related to respondents' personal characteristics and experiences, aspects of their work

situation, and their attitudes toward using an independent study kit for training. The dependent variables were acquired knowledge and changed attitudes as measured by increases in scores on the posttest. The following factors were hypothesized to have either a positive or negative effect on knowledge and attitude measures:

- (1) Age of subject.
- (2) Type of employing agency.
- (3) Length of time needed to complete the kit.
- (4) State where the subject worked (South Dakota or Minnesota).
- (5) Personal experiences that the subject had relating to personal care and homemaking.
- (6) Personal attitudes toward an independent study training program and attitudes toward the kit.
- (7) The attitude of the supervisor towards the training program.

Instrumentation

Interest in the need for the instruction of Home Care aides is a relatively recent occurrence. No one instrument has been developed and standardized to assess Home Care aides' acquisition of basic skills. A two part pre and posttest was developed for this study. Part one of the test assessed the aides' attitudes toward the delivery of care to the elderly and/or disabled within the social service organization. Part two was concerned with the acquisition of knowledge of the subject matter. A third part of the instrument, developed by the researcher, accompanied the posttest and consisted of questions which served as the source of independent variables.

Although test writing guidelines recommend that items from each

behavioral objective be represented in the test (Gronlund, 1973), the researcher decided that a total of forty items would provide a representative sample of the respondents' mastery of the objectives. This decision was based upon testing experiences of the researcher, colleagues, and aspects of the testing situation. The aides had little prior testing experience, and a lengthy test could have produced testing apprehension and less reliable results. To assure a representative sample of items from each chapter, a table of specification was used. The complete table of specifications can be found in Appendix A.

Development of the attitude survey. The development of attitude statements included in the pre and posttest involved several steps. First, to obtain information about attitudes and opinions that the Home Care worker should possess to be affective providers of care, the model curriculum, Home Care supervisors and the subject matter specialists were consulted. A composite of attitude statements was developed.

Statements selected for use in the instrument were those that supplied needed information, expressed a clearly positive or clearly negative attitude and were worded clearly. An attempt was made to use only unidimensional items on the measuring of one attitude per statement (Shaw, and Wright, 1967). However, this aspect is difficult to measure and is beyond the scope of this study. Two attitude statements were selected for each chapter for a total of sixteen items. Only two items were chosen to prevent a lengthy test. Also, the majority of the training program addressed the acquisition of knowledge of the material.

In an attempt to eliminate agreement response bias, twelve items were worded in a favorable direction, four were worded in an unfavorable direction.

Response to attitudes was measured by a five category Likert-type scale with responses ranging from "strongly agree" (a scoring value of one) to "strongly disagree" (a scoring value of five). A five point scale was selected because it has the capacity to adequately represent a respondent's level of positiveness and negativeness without damaging reliability due to an overwhelming number of choices.

Development of the cognitive survey. Several steps were involved in the development of the twenty-four item section of the instrument testing the cognitive domain. First, a table of specifications was developed. A test bank of item stems corresponding to the behavioral objectives was written. Gronlund (1973) has stated that since there is little theory and research to guide the development and use of criterion-referenced tests, judgement of the test developer plays a prominent role in test development. Based upon past testing experiences, the researcher decided which items would represent mastery of the behavioral objectives.

The initial decision was to develop a pretest and matched item posttest. The pretest consisted of multiple choice, true-false, and matching items. The original posttest consisted of matching, true-false, and short essay questions.

Thirteen homemakers from South Dakota and Minnesota and seven South Dakota secondary home economics instructors were asked to respond to the two tests. Results were analyzed statistically for internal

consistency and difficulty level as measures of reliability. Items were discarded or rewritten if the discrimination index was less than .20 and if the difficulty level was less than .20 (considered too difficult) or greater than .80 (considered too easy).

On the advice of the consulting statistician and a test and measurements specialist, the decision was made to use identical instruments for the pre and posttest in order to obtain a more reliable indicator of achievement resulting from the use of the kit. Based on a close examination of items, other changes were made. These changes included the following:

- (1) Expressing the item in simpler, more direct language.
- (2) Elimination of wordiness.
- (3) Removing clues, such as "always", "sometimes" and grammatical inconsistencies, that may lead to the correct answer.
- (4) Writing test items in a positive format.
- (5) Changing the title of the instrument from "test" to "survey" to eliminate testing apprehension.

These considerations improved the reliability of the test (Gronlund, 1973).

Development of the descriptive data questionnaire. A questionnaire was developed to assess interactions that were hypothesized to limit generalization of treatment effects. Snow (1974) defines interactions as important personal characteristics of the learners that go ignored, treatment variations, and/or attitudes toward the treatment. Also, he says that any generalization is uncertain unless the researcher checks for or takes precautionary measures to eliminate interactors in the data.

The questionnaire was divided into two sections: 1) personal attributes and experiences and 2) personal attitudes toward the independent study kit that could affect the aide's performance on the test. The researcher developed the statements based upon research defining personal attributes of the Home Care worker that were conducive to employability.

All instruments are included in the Appendix. Appendix D contains both the attitude and knowledge sections of the "Homemaker-Home Health Aide Survey" and the descriptive data questionnaire is in Appendix C.

Administration Of The Instruments

Supervisors responsible for training the Home Care workers administered the instruments following instructions from the researcher. Both oral and written instructions were given. The following figure shows the sequence used when administering instruments:

- (1) Supervisors administered the "Homemaker-Home Health Aide Survey" as a pretest.
- (2) Home Care workers were instructed in the purposes for training utilizing independent study and the use of the kit. Instructions included the use of self-paced learning, self-testing and learning activities.
- (3) The Home Care workers completed the independent study training program.
- (4) The trainee was given the "Homemaker-Home Health Aide Survey" as a posttest and the descriptive data questionnaire.

Figure 2

Procedure Used When Administering the Instruments

Supervisors were responsible for returning answer sheets and the

questionnaire to the researcher. To facilitate follow-up, answer sheets and questionnaires were coded by number and the name of the agency represented.

Scoring And Analysis

A five-point Likert scale was used to measure item response on the attitude survey. A score of one indicated a highly favorable response or agreement with the statement, a score of five, an unfavorable response or disagreement. Items stated negatively were numbers six, nine, fifteen and sixteen.

On the cognitive area of the survey, each item was worth one point. Respondents were given one point if they answered correctly, zero if they answered incorrectly. Multiple choice items where the respondent circled more than one response were considered incorrect, with duplicate responses being accounted for in the choice distribution.

On the descriptive data questionnaire, a five point Likert scale was used to measure item response to the attitudes toward training utilizing independent study and the independent study kit. A score of one indicated a highly favorable response or agreement with the statement, a score of five, an unfavorable response or disagreement.

Results were analyzed statistically by computer for internal consistency and difficulty level as measures of reliability. Presently, statistics for estimating the validity and reliability of criterion-referenced mastery tests are being developed (Gronlund, 1973); therefore, norm-referenced standards were used. According to TenBrink (1974), a discrimination index greater than or equal to .10 of the

total number of subjects (.27) and a difficulty level ranging between .20 and .80 are coefficients indicating acceptable reliability.

Results were analyzed for mean changes in attitude and knowledge. A paired t-test was done to determine the statistical significance of the mean change. The multiple linear regression was determined to describe the relationship between changed attitudes, knowledge and the hypothesized interactant. Attitude and cognitive scores were expressed as total mean scores.

Limitations To The Study

There were several limitations to the study due to situational handicaps. Subjects were obtained as the agencies hired new employees. Time did not permit larger sampling. Although the researcher took precautionary measures, lack of control over the administration of the treatment was very evident. The majority of the supervisors had neither prior experience with independent study nor formal training in the use of independent study. Also, there was a tendency for the immediate employment needs of the specific agency to dictate techniques for utilizing the kit. In a few situations, trained Home Care workers were needed within seventy two hours due to Medicare laws. In these situations, workers were rushed through the program.

Snow (1974) concludes that the lack of control over the administration of treatment variables is common in educational studies. He says, "treatments are sampled from a target universe of treatments, whether the investigator recognizes this explicitly or not." Snow (1974, p. 268) further comments on this lack of control over the adminis-

tration of the treatment when he states:

a greater deal of behavioral stability may take place in the natural setting.... If complex behavior is assumed to be both probabilistic and multidimensional, 'stripping' the environment down to a minimum in order to control, to determine the role of a very few variables, may be a potentially self-defeating process.

For purposes of this study, the "natural setting" refers to the tendency for the immediate needs of the specific agency to dictate techniques for utilizing the kit. The variables(s) controlled for refers to the independent study self-pacing variable.

McMullen (1974) comments on the "practice effect" characteristic of testing when the same test is used for the pre and posttest. In other words, one cannot be sure that the subject is concentrating on answering the question based upon mastery of the objective or remembering the previously stated response. The "practice effect" is more likely to occur in training settings where the trainee was rushed through the training program.

A limitation to the survey was limited analysis of the instrument. According to TenBrink (1974), any item analysis done on a small number of subjects is inaccurate. Also, it is recommended that one half of the statements on an attitude survey be positive in nature, the other half negative.

According to Snow (1974), the educational researcher puts intrinsic limitations of control upon themselves when deciding to deal with human behavior. The researcher cannot control how the subject copes with the treatment. Guessing, random responding to items, carelessness,

the omission of answers, and the tendency to give socially desirable answers are all possible intrinsic limitations to educational research.

CHAPTER IV

FINDINGS

Twenty-seven Home Care trainees completed the independent study training program. Changes in attitudes of trainees toward Home Care employment and knowledge of subject matter were assessed.

The Statistical Package for the Social Sciences (SPSS) was used to analyze the data on attitudes and knowledge obtained prior and subsequent to completion of the independent study training program. A paired t-test was used to compute the statistical significance of the means. The multiple linear regression, describing the relationship between the hypothesized independent variables and mean changes on the attitude and knowledge test, were obtained from this package. An item analysis of the instrument was done to assess item reliability. The South Dakota State University computer center was the site of all statistical computations.

Characteristics Of The Sample

According to Snow (1974), there are two threats to the validity of educational studies--internal validity (interpretability) and external validity (generalizability). The key to generalization is through a description of the characteristics of the sample and how these characteristics relate to the dependent variables of the study (Snow, 1974). Characteristics of Home Care workers are described in Table 2. Table 3 describes the interactive processes occurring between the training program and the subjects.

Table 3

Choice Distribution by Frequency and Percent of Home Care
Trainee's Attitudes Toward the Independent Study Kit
and Training Utilizing Independent Study

Item ¹	Response Frequency and Percent ²									
	1		2		3		4		5	
	Fq.	%	Fq.	%	Fq.	%	Fq.	%	Fq.	%
A. An adequate method of orientation.	11	40.7	12	44.4	00	00.0	2	7.4	2	7.4
B. Easy to understand.	10	37.0	14	51.9	00	00.0	2	7.4	1	3.7
C. Learning activities were helpful.	10	37.0	12	44.4	4	14.8	00	00.0	1	3.7
D. Material was too easy.	00	00.0	3	11.1	9	33.3	13	48.1	2	7.4
E. Multi-media approach enhanced learning.	7	25.9	15	55.6	2	7.4	1	3.7	2	7.4
F. Art was enjoyable.	10	37.0	10	37.0	6	22.2	00	00.0	1	3.7
G. Required too much reading.	00	00.0	4	14.8	5	18.5	13	48.1	5	18.5
Total	N=27					100%				

¹Item 4 on demographic questionnaire.

²Attitude response scale

- 1 Strongly Agree
- 2 Agree
- 3 Undecided
- 4 Disagree
- 5 Strongly Disagree

Except for one person, all subjects were Social Service employees. Subjects were obtained from both South Dakota and Minnesota, with the majority of the sample being South Dakota residents.

The length of time taken by the trainees to complete the kit varied according to the individual trainee's needs and the immediacy of the agency's need for trained individuals. More than half of the trainees took two weeks or less to complete training, with thirty-seven percent completing the program in less than a week. Five trainees took over thirty days to complete the program.

Each agency had access to one kit when training. Depending upon the number of workers to be trained at a specific time, the kit was administered to either a group of trainees or to an individual trainee. Individual administration was used most frequently.

The history of Home Care shows that most persons begin employment as Home Care aides later in life, after having personal experience with similar tasks and responsibilities as a family member. The subjects in this study confirm these characteristics with most being over thirty-six years of age and all having had some personal experiences related to Home Care. Most subjects had a moderate to large amount of experience.

Supervisors responsible for implementing the program were classified as having either positive or less positive feelings toward the program and being actively or non-actively involved in the training. Slightly over half of the subjects had supervisors who were actively involved in the training program.

Seven items were developed to assess trainee attitudes toward

utilizing independent study and the specific kit as a training method. Table 3 shows the choice distribution of responses by frequency and percent.

Item one assessed the trainee's attitude toward independent study as a method of training. Twenty-three of the respondents had favorable attitudes toward training utilizing independent study.

When developing the material, precautions were taken to present the material in a clear, easy to understand manner. According to item 2, the vast majority of respondents felt that the material met this criterion. According to item 4, the material was not condescending.

A characteristic of independent study is that learning activities provide reinforcement of the concepts being taught and practice of subject matter. Based on item 3, twenty-two respondents felt that learning was enhanced by the learning activities.

Attitudes toward the multi-media approach was assessed in item 5. Eighty-two percent of the respondents felt that listening to tapes and reading from the manual simultaneously was conducive to learning. The majority of the trainees also felt that the art work made the training program more enjoyable (item 6).

When developing the independent study kit and assessment devices, reading level was viewed as a factor which might influence performance. Responses to the statement on the amount of reading required indicated that the majority of the trainees did not feel that the program required too much reading.

Changes In Attitude and Knowledge

A paired t-test was used to statistically analyze the significance of mean changes in knowledge and attitude occurring between pre and posttest administration. Table 4 shows the results of the analysis. These figures indicate that no significant change in attitude or knowledge resulted from the use of the independent study training program. Mean scores on the attitude portion of the test decreased, indicating more favorable attitudes toward Home Care employment. Knowledge or cognitive scores showed an overall increase but not to a significant degree. Variability of scores increased from pre to posttest for both attitude and knowledge.

The Relationship Between Changes And The Independent Variables

Significant changes in the mean attitude and knowledge, as assessed by the instrument, did not occur through the independent study training program. As recommended by the consulting statistician, multiple regression was done to describe how the independent variables were interacting with the dependent variables. The attitude and knowledge tests were analyzed separately. The independent variables used were the subjects personal and employment related characteristics as identified in Tables 2 and 3.

Multiple regression is a statistical technique used to analyze the relationship between a criterion variable and a set of independent or predictor variables. In multiple regression, it is assumed that the effects of the independent variable are additive, with the assumption implying that the relationship between the dependent variable and any given independent variable is the same across all values of the remaining

Table 4

Changes in Attitude and Knowledge Between
Pre and Posttest Administration

	Total Pretest Attitude	Total Posttest Attitude	Total Pretest Cognitive	Total Posttest Cognitive
Mean	42.37	41.30*	13.41	14.67
Standard Deviation	4.33	5.82	2.47	3.67
Mean Difference		1.07		1.26
Standard Error		1.13		.75
T-Value		.95		1.69
2 Tail Probability		.35		.103

*Figure represents more positive attitudes toward Home Care employment through the agency.

independent variables. Each variable works with other variables to form the entire structure of linkages between the independent and dependent variables. The order of entry of the variables reflects the hierarchy of the presumed cause-effect linkages (Nie, et al., 1975).

The statistical technique, multiple regression, is a descriptive and/or inferential tool. For descriptive purposes, it: a) finds the best linear prediction equation and evaluates its occurrence, b) enables the researcher to evaluate the contribution of a specific variable or a set of variables, c) determines structural relations and provides an explanation for multivariate relationships. As an inferential tool, it is used for hypothesis testing and/or to predict outcomes (Nie, et al., 1975). For purposes of this study, the small number of subjects (n=27) eliminates the option of using multiple regression for inferential purposes.

When using multiple regression, all normal independent variables must be stated as separate dichotomous variables. For purposes of this study, the length of time taken to complete the kit, age of the trainee and personal experiences related to Home Care were nominal variables that needed to have each category of the variable put into a separate dichotomous class. A set of dummy variables, K-1 dummies, are entered into the regression equation, with the excluded category becoming the reference category used to judge and interpret other dummies (Nie, et al., 1975). When interpreting the regression coefficients, the fact that the scores of dummy variables have no

meaning other than standing for a particular category in the original variable must be considered.

On the affective or attitude test, a group of sixteen of the set of independent variables explained, with significance ($P < .05$), the relationship with the changed mean. On the cognitive test, the relationship between the independent variables and changed mean was not found to be significant. Table 5 describes the additive effects of the set of independent variables, with the order reflecting the hierarchy of the linkages.

Although mean changes in scores from the pre to post cognitive test were not significantly related to the independent variables, it is important to consider the hierarchy of variables. The first five variables considered to predict the criterion included the following: completing the training program in 1-2 days, individuals in the age group of 35-50 years old, the trainees' reaction to the amount of reading involved in the program, trainees' reaction to the learning activities and his/her belief that the material was presented in an understandable manner.

Evaluation Of The Instrument

A two part instrument to assess attitudes and skills of Home Care workers was developed by the researcher because no standardized instruments could be located. Part one related to attitudes of trainees toward Home Care, and part two assessed knowledge of Home Care tasks and responsibilities. The same instrument was used for the pre and posttest.

Item analysis of the posttest results was used to test for

Table 5

The Independent Variables Affecting the Changed
Means with a Level of Significance ($P < .05$)
86 Percent of the Time

Order of Variables entry	Regression Coefficient
Y-Intercept	-79.235
Employing Agency	- 1.345
Limited Amount of Personal Experiences	- 2.016
Age 36-50 Years	7.062
Reaction to the Amount of Reading Involved	- 1.422
Method of Utilizing the Kit	36.026
Supervisory Involvement in Training Program	15.675
Moderate Amount of Personal Experiences	- .476
Age 18-25 Years	-12.307
Completion of Kit in 15-21 Days	47.637
Completion of Kit in 1-2 Days	30.917
Art Work	- 6.001
Completion of Kit in 8-14 Days	14.056
Employing State	4.766
The Use of Learning Activities to Increase Learning	5.069
The Level of Difficulty of the Material	- 4.537
Completion of the Kit in 22-30 Days	11.092

instrument reliability. Coefficients of discrimination and difficulty were obtained for each item in addition to a discrimination index for each subscale. The results obtained through instrument analysis are presented here as a basis for further improvement of the instrument and adaptation in similar studies.

Test reliability was determined for the cognitive part of the instrument using the K-R-21 short formula. A .58 reliability coefficient was obtained, indicating the need to investigate how reliability might be improved.

Using criterion-referenced standards, reliability coefficients enabled the researcher to place trainees into two groups, those who did reach and those who did not reach mastery. Mastery criterion generally ranges from .70 to .90, depending upon the testing situation (Gronlund, 1973). For purposes of this study, a lower mastery level criterion of .60 was designated. This decision was based upon educational specifications for employment. The only educational requirement was the ability to read and write. Also, many of the trainees had not taken a test in the past twenty years. Using these standards, there were eleven items (17, 21, 22, 24, 26, 29, 30, 34, 35, 36 and 40) on which mastery was not obtained.

Tables 6 and 7 show the coefficients for the attitude and knowledge instruments. A comparison of choice distributions of the items is included in Appendix D for use in further diagnosis of the instrument.

Summary

Results of this study indicate that mean changes of attitudes and knowledge when utilizing the independent study training program

Table 6

Data from the Item Analysis of the Attitude Section of the Posttest

Item	Chapter Source	Mean	Standard Deviation	R ¹	R ²
1	1	1.37	.77	.26	.69
2	1	1.89	.99	.61	.82
3	2	1.67	.94	.67	.83
4	2	1.96	.99	.50	.85
5	3	1.67	.94	.53	.56
6	3	3.48*	1.13	.07	.73
7	4	2.19	.98	.56	.89
8	4	2.85	.52	.34	.51
9	5	3.85*	1.23	.11	.86
10	5	2.70	.71	.55	.46
11	6	2.41	.91	.33	.88
12	6	2.70	.71	.62	.79
13	7	2.41	.91	.66	.81
14	7	1.81	.98	.52	.84
15	8	4.19*	.54	.15	.60
16	8	4.15*	.84	.20	.86

*Reversed items, with means closest to 5 desirable.

R¹: Discrimination index (reliability coefficient) for the item in relation to the entire test.

R²: Discrimination index (reliability coefficient) for the item in relation to the other items in the given subscale (chapter source).

Table 7

Data from the Item Analysis of the Knowledge Section of the Posttest

Item	Chapter Source	Mean	Standard Deviation	R ¹	R ²
17	3	.52	.50	.44	.79
18	4	.67	.47	.56	.64
19	3	.78	.41	.49	.72
20	3	.63	.48	.29	.51
21	2	.15	.36	.47	.66
22	5	.44	.50	.43	.78
23	8	.81	.38	.46	.85
24	6	.37	.48	.58	.83
25	6	.63	.48	.29	.66
26	4	.59	.49	.47	.74
27	5	.78	.41	.37	.56
28	2	.67	.47	.41	.64
29	1	.15	.35	.41	.67
30	1	.33	.47	.52	.83
31	5	.89	.31	.00	.37
32	1	1.00	.00	.00	1.00
33	7	1.00	.00	.00	1.00
34	7	.44	.50	.62	.88
35	8	.07	.26	.61	.63
36	4	.44	.50	.21	.46
37	8	1.00	.00	.00	1.00
38	7	.93	.26	.03	.44

Table 7 (Continued)

Item	Chapter Source	Mean	Standard Deviation	R ¹	R ²
39	2	.89	.31	.00	.40
40	6	.43	.50	.52	.63

Mean: Mean level of difficulty.

R¹: Discrimination index (reliability coefficient) for the item in relation to the entire test.

R²: Discrimination index (reliability coefficient) for the item in relation to the other items in the given subscale (chapter source).

were not significant ($P > .05$). Based on results from the paired t-test, the change cannot be attributed to the treatment.

The average Home Care trainee was a South Dakota Social Service employee, completing the training program in either eight to fourteen days or one to two days. Usually, the trainee completed the training program independently. The trainee was usually over fifty years old and had a large amount of personal experiences related to Home Care. Just over half of the trainees had training supervisors who assisted them as they progressed through the training program.

Attitudes toward the independent study training program were positive. Trainees felt that the level of difficulty was adequate with the material presented in a clear, easy to understand manner. The amount of reading required of the trainee did not appear to be excessive. The learning activities and the multimedia approach were conducive to learning; the art work made the program more enjoyable.

Based on the statistical technique, multiple regression, a group of sixteen of the independent variables predicted results with significance in the affective test. The independent variables were not significant predictors of results of the cognitive test.

The item analysis of the instrument provided coefficients to assess instrument reliability and predict mastery of the criterion. These results form the basis for further improvement of the instrument and adaptation in similar studies.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

The purpose of the study was to evaluate an independent study kit developed to orient Home Care workers in basic skills, to identify procedures essential to successful use of independent study and to document problems occurring with the use of independent study. A two part instrument developed for this study was used to obtain evaluative data.

Twenty-seven Home Care trainees completed the independent study program administered by supervisors. The procedure involved-- 1) taking the "Homemaker-Home Health Aide Survey" as a pretest, 2) studying the material in the manual with the option of listening to the tapes and reading the manual simultaneously, and 3) taking the survey as the posttest and completing the descriptive data questionnaire.

Changes in means on the affective and cognitive test, indicating more positive attitudes toward Home Care employment and an increased understanding of Home Care resulting from the treatment, were insignificant. On the cognitive test, the independent variables were unable to provide a significant explanation for the change. The independent variables did explain, with significance, changes in the score on the affective test.

Implications

The inability of the independent variables to explain the insignificant changes in means on the cognitive test causes one to search for

other characteristics of the treatment variable that might explain the criterion. Prior to the initial use of the independent study training program, supervisors responsible for training Home Care workers were not taught how to use independent study as a method of training. The researcher concludes that the lack of supervisory preparation for the task of training utilizing independent study affected the results. Snow (1974, p. 280) comments on the need for preparation of the subjects for an educational experiment when he says,

situations of optimum learning require a great deal of preparation. If we do experiments in learning with only superficial preparation...then the rare things get swamped by statistical noise...to put a complex system in a prepared state takes time.

The researcher believes that in order for an educational innovation to produce positive results, educators need more than simple instructions and a few hours of training.

An examination of the choice distributions on the cognitive test enables one to further diagnose test weakness. Based on this analysis, the researcher concludes that three items (21, 29 and 36) should be improved. Suggestions for changing the three items are:

- a) Item 21, response "C": Help them see how they spend their money.
- b) Item 29: The Home Care worker should become personally involved with the client's life.
- c) Item 36: Foods refrigerated in containers without lids will mold more quickly than foods refrigerated in tightly covered containers.

The researcher concludes that Item 34 does not represent the scope of objectives in Chapter 7, "Physiology." A more representative

item is: As an aide, you can observe the client's condition while giving personal care by listening to him/her.

On attitude questionnaires, agreement response bias is eliminated by wording half the statements in a favorable direction and half in an unfavorable direction (Shaw, and Wright, 1967). Based on this standard, at least three more statements should be worded negatively. The following changes would eliminate possible agreement response bias:

- (a) Item 4: When cleaning your client's home, clean according to your personal values and standards of cleanliness rather than your client's standards.
- (b) Item 8: As an aide, I should try to change my client's food habits.
- (c) Item 12: Experiencing a family crisis, such as death or financial crisis, weakens family unity.

Recommendations

In January 1980, a workshop was given to teach currently employed supervisors techniques for training utilizing independent study. Presently, an independent study package on training utilizing independent study is being developed. A follow-up study should be done with more control over treatment variables assured by taking the sample from supervisors trained in the use of independent study. Also, the sample should be much larger.

According to Snow (1974), a characteristic of educational experiments is the variance of treatment variables. He also states that no progress has been made in studying the dimensionality of instructional treatments (Snow, 1974). Characteristics unique to this training situation lend well to studying the effects of dimensions of instructional treatments.

The instruments for this study were developed based on the Model Curriculum and Training Guide developed by the National Council for Homemaker-Home Health Aide Services. This study should be considered merely the beginning in the development of an instrument to assess the attitudes and knowledge of Home Care workers. The instrument needs further testing and refinement. Considering the educational background of the Home Care worker, relying more heavily on descriptive data based on observation would be helpful.

The Home Care industry has a rapid turnover of employees. Further research considering the cost of alternative modes of training in relation to the relatively low cost of training via independent study needs to be done. Also, research comparing and contrasting independent study training programs with alternative modes of training needs to be done.

Individuals most likely to be Home Care employees have a repertoire of past experiences relating to Home Care. Further study needs to be done on developing means to assess knowledge from life's experiences, thus avoiding needless repetition in training.

The ultimate goal of the Home Care field is to provide services to enhance the quality of life for persons and families in need of short or long-term assistance. Disciplined study of how to enhance quality of life is essential.

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APPENDIX A

TABLE OF SPECIFICATIONS UTILIZED FOR
INSTRUMENT CONSTRUCTION

TABLE OF SPECIFICATIONS
FOR FINAL INSTRUMENT

Weight	Objectives	Knowledge ²	Comprehension	Application	Affective Domain
Agency Policies 1/8 ¹	<ul style="list-style-type: none"> --Recognizes his/her responsibility to the family, individual, and health care team. --Takes pride in the services that s/he provides. --Distinguishes between care given by an aide and care given by skilled personnel. --Is aware of agency history. 	1	1 1		2
Home Management 1/8	<ul style="list-style-type: none"> --Identifies personal values, goals, standards, resources. --Knows and understands facts and principles of management. --Knows, understands, and utilizes principles of time, energy and resource management when performing expected responsibilities. --Differentiates own values from client's values. --Accepting of client's values, goals, standards. --Identifies why a clean home is important. --Assists family members in applying management techniques and identifying values, goals, resources. --Knows products available for cleaning. --Stores and uses products safely. 		1 1		1 1

TABLE OF SPECIFICATIONS
FOR FINAL INSTRUMENT, CONT'D

Weight	Objective	Knowledge	Comprehension	Application	Affective Domain
1/8	--Identify attitude toward Nutrition Education. --Identify six leader nutrients. --Explains each nutrient contribution to total health. --Identify foods containing each food nutrient. --Defines "food fallacies."				1
			2		1
			1		
1/8	--Identify factors influencing food habits. --Identify client's food habits. --Accepts client's food habits. --Identifies principles involved in meal planning. --Plans meals to satisfy given case studies. --Analysis of menus using check sheet. --Understands principles involved in food buymanship and storage. --Understands facts and principles involved in cooking vegetables to retain nutrients. --Knows and understands principles of food safety. --Understands food needs of elderly.				1
			1		1
			1		
			1		

TABLE OF SPECIFICATIONS
FOR FINAL INSTRUMENT, CONT'D

Weight	Objective	Knowledge	Comprehension	Application	Affective Domain
Aging 1/8	<ul style="list-style-type: none"> --Identifies personal attitudes toward elderly. --Distinguishes between facts and fallacies about aging. --Gives examples of general characteristics, particular needs, and problems of elderly. --States causes of depression and loneliness. --Predicts when elderly person is depressed or lonely. --Is aware of community resources for the elderly. 	1	1 1		2
Family Crisis 1/8	<ul style="list-style-type: none"> --The Aide will be aware of the family's role in providing support. --Will be able to identify "Family Tasks" being met and not being met. --Distinguishes between 3 types of crises. --Develop attitudes towards crises and the effects on families. --Develop skills that will enable him/her to help families deal more effectively with crises. --Generalizes children's needs when experiencing death. --Is aware of children's developmental needs. 		1 1 1		1 1

TABLE OF SPECIFICATIONS
FOR FINAL INSTRUMENT, CONT'D

Weight	Objective	Knowledge	Comprehension	Application	Affective Domain
Physiology 1/8	--Identifies the functions of the body's systems.				1
	--Assesses body functions. --Recognizes signs and symptoms of illness. --Recognizes changes in body with aging.	1	1 1		1
Personal Care 1/8	--Makes an occupied and unoccupied bed --Bathes patient. (Administers PC) --Positions patient in bed. --Assists in ambulation --Demonstrates body mechanics. --Applies and changes sterile dressings. --Assists with range of motion technique. --Administers C.P.R. --Eliminates safety hazards in the environment. --Assists with basic first aid. --Understands needs of diabetic client.	1 1			2
			1		

¹Indicates weight of chapter in the test.

²Numbers on this and other columns represent number of items in that area included in the instrument.

HOMEMAKER-HOME HEALTH AIDE SURVEY

Instructions: After reading the statement, circle the number on the

answer sheet which best describes your feelings. The questions are based on the five-point scale as follows:

- 1. Strongly Agree
- 2. Agree
- 3. Uncertain
- 4. Disagree
- 5. Strongly Disagree

- 1. There are reports in the community that need the home care services
- 2. I am best with side, I am part of a health care team.
- 3. In addition, time and management skills are necessary for job success.
- 4. When on the job, your client's values, standards, and goals should be considered before your own.

APPENDIX B

HOMEMAKER-HOME HEALTH AIDE SURVEY

- 5. Nutrition knowledge is needed by everyone.
- 6. The only way to control weight is to control weight.
- 7. Following a food guide helps to insure a healthy diet.
- 8. Home health aides should not try to change a client's food habits.
- 9. Home health aides should not be off if they live in retirement centers or communities and they are relieved of their responsibilities.
- 10. The signs and symptoms of the signs of old age.
- 11. The family has more lasting effects on people than the nursing home.
- 12. Experiencing a family crisis enriches the life of family members.
- 13. The digestive system and other body systems work best if the client is a successful home care aide.
- 14. The home health aide does not diagnose illness; knowing the signs and symptoms of illness is important.
- 15. Home health aides, nurses, and other persons' care tasks do not require understanding of the client's feelings.

HOMEMAKER-HOME HEALTH AIDE SURVEY

Part I: Attitude Questionnaire

Instructions: After reading the statement, circle the number on the answer sheet which best describes your feelings. The questions are based on the five point scale as follows:

1. Strongly Agree
2. Agree
3. Undecided
4. Disagree
5. Strongly Disagree

1. There are people in the community that need the home care services this agency provides.
2. As a home care aide, I am part of a health care team.
3. As an aide, time and management skills are necessary for job success.
4. When on the job, your client's values, standards, and goals should be considered before your own.
5. Nutrition knowledge is needed by everyone.
6. The main reason for having a well balanced diet is to control weight.
7. Planning daily meals using the basic 4 food guide helps to insure a balanced diet.
8. As an aide, I should not try to change a client's food habits.
9. Older people are better off if they live in retirement centers or communities where they are relieved of their responsibilities.
10. Forgetfulness is one of the signs of old age.
11. In today's society, the family has more lasting effects on people than any other institution.
12. Experiencing a family crisis enriches the life of family members.
13. Knowing how the digestive system and other body systems work is necessary to be a successful home care aide.
14. Even though the aide does not diagnose illness, knowing the signs and symptoms of illness is important.
15. Bed baths, nail care, and other personal care tasks do not require an understanding of the client's feelings.

16. My learning how to give personal care is unnecessary since most people naturally know how to do these tasks from personal experience.

Part II: Multiple Choice

Instructions: After reading the item, circle the letter of the word or phrase that best completes the sentence or answers the question.

17. Your client does not like milk. Which is the best alternate source of calcium?
- A. broccoli.
 - B. American cheese.
 - C. cottage cheese.
 - D. bread.
18. Which breakfast main dish would provide the most nutrition with the least number of calories?
- A. 1 hard cooked egg with 1 slice buttered toast.
 - B. 1 scrambled egg with 2 slices of bacon.
 - C. 1 fried egg with 1 slice buttered toast.
 - D. 2 slices toast with peanut butter.
19. The diet for a client who has just broken a bone should provide extra:
- A. iron.
 - B. calcium.
 - C. vitamin D.
 - D. protein.
20. The nutrient most needed in extra amounts by a client recuperating from surgery is:
- A. carbohydrate.
 - B. protein.
 - C. calcium.
 - D. iron.
21. Generally, the best way to help clients who live on a very low income is to:
- A. teach them how to budget money.
 - B. budget their money for them.
 - C. help them see where their money is going.
 - D. help them find ways to increase their income.

22. When working with a client who talks only of the past, the best thing an aide can do is:
- A. listen to the client.
 - B. emphasize the present.
 - C. ignore the client.
 - D. change the topic.
23. When a diabetic needs nail care, an aide should:
- A. cut the nails.
 - B. call it to the supervisor's attention.
 - C. have the client cut his/her own nails.
 - D. cut the nails after getting the supervisor's approval.
24. A client with a combination of poor housing, interference from relatives and a hospitalized child would be a crisis classified as:
- A. maturational.
 - B. exhaustion.
 - C. shock.
 - D. critical.
25. Most frequently the home care aide's success as a helper will depend upon having the ability to:
- A. solve the client's problems.
 - B. empathize with the client.
 - C. sympathize with the client.
 - D. take over for the client when helping.
26. When preparing vegetables, the most flavor and nutrition will be preserved by:
- A. boiling them rapidly for a short period of time.
 - B. cooking them with the lid on.
 - C. cooking them in the least amount of water possible.
 - D. refrigerate raw vegetables (i.e. carrot sticks) in a covered container with water.
27. Most elderly people:
- A. no longer enjoy companionship with the opposite sex.
 - B. spend the majority of their income on food and shelter.
 - C. become senile.
 - D. have digestive problems such as diarrhea.

28. A grocery shopping habit that is likely to save the most money is:
- A. going to the store two or three times a week to take advantage of all sales.
 - B. purchasing the largest size of the item that is available.
 - C. purchasing canned and frozen meals (t.v. dinners, pot pies) when they are on sale.
 - D. purchasing staples (sugar, flour, etc.) when they are on sale.

Part III: True and False

Instructions: After reading the statement, circle "T" if you feel the item is true; "F" if you feel it is false.

29. Getting to know your client personally helps create a better working relationship.
30. Even if you have time, you should not clean the client's refrigerator when they ask you to unless it is on your "plan of work."
31. Elderly persons are more susceptible to burns because as a person ages the sense of touch decreases.
32. The home care aide is responsible for reporting changes in the client's condition to the supervisor.
33. If a client vomits, the aide should record what the vomit looks like.
34. A low white blood count makes the blood clot slower after a cut.
35. When caring for an unconscious person, the first thing to do is determine if there is a pulse.
36. Foods put into a refrigerator without a lid will mold more quickly than with a lid.
37. Delaying meals for an hour or more could cause a diabetic client to have an insulin reaction.
38. As a person gets older, the heart becomes less efficient, causing the amount of blood pumped out to decrease.
39. Alternating tasks that you enjoy with those that you do not enjoy will generally save cleaning time.
40. When explaining the death of a grandmother to a preschooler, it would be wise to tell the child that grandmother has gone to heaven.

APPENDIX C

DESCRIPTIVE DATA QUESTIONNAIRE

QUESTIONNAIRE

This questionnaire is designed to provide information about your past and present experiences. Circle the response(s) that apply to you.

1. My approximate age is:
 - A. 18-25 years old.
 - B. 26-35 years old.
 - C. 36-50 years old.
 - D. 50 years or above.

2. The population of the community in which I live is:
 - A. under 500.
 - B. 500-2,000.
 - C. 2,000-5,000.
 - D. 5,000-15,000.
 - E. over 15,000.

3. Many of your past and present experiences will help you in your home care work. Circle the responses that apply to you. I.....
 - A. am the main manager of the family's income.
 - B. have experienced the death of an immediate family member.
 - C. have provided home care for a disabled person for 3 or more months.
 - D. have provided home care for a sick or physically disabled person for 3 or more months.
 - E. have reared/am rearing children.
 - F. have been previously employed in a "helping" career such as nurses aide, nursing home employee, etc.
 - G. have been/am a volunteer with senior citizens, and/or other community projects which help persons in need.

4. On the following items, circle the number from the scale that best describes your feelings about this learning kit.

Scale: 1 strongly agree
 2 agree
 3 undecided
 4 disagree
 5 strongly disagree

 - A. This independent study kit was an adequate method of orientation for home care employment. 1 2 3 4 5
 - B. This material was presented in an easy to understand manner. 1 2 3 4 5

- C. The exercises within the chapters helped me to understand the material. 1 2 3 4 5
- D. The material was too easy. 1 2 3 4 5
- E. Hearing the tapes and reading the manual at the same time made learning easier. 1 2 3 4 5
- F. The art work made the learning kit more enjoyable. 1 2 3 4 5
- G. Too much reading was required in this kit. 1 2 3 4 5
5. Additional comments about this learning kit.

APPENDIX B

PERCENTAGE OF CHOICE DISTRIBUTIONS
OF THE FIVE AND FORTIETH

The Percentage Comparison of Choice Distributions for
the Attitude Section of Pre and Posttest

Item	Chapter	Pretest Affective Domain					Posttest Affective Domain				
		Response Choice Frequency					Response Choice Frequency				
		1	2	3	4	5	1	2	3	4	5
1	1	78	19	4	0	0	81	19	0	0	0
2	1	48	52	0	0	0	56	37	7	0	0
3	2	56	44	0	0	0	67	30	0	0	4
4	2	56	37	7	0	0	52	41	4	4	0
5	3	67	33	0	0	0	67	30	0	0	4
6*	3	7	19	11	52	11	7	19	4	59	11
7	4	44	52	4	0	0	41	59	0	0	0
8	4	0	19	26	52	4	7	30	22	41	0
9*	5	0	4	7	56	33	11	4	7	44	33
10	5	7	30	19	41	4	15	30	7	44	4
11	6	41	37	15	7	0	30	59	11	0	0
12	6	11	48	33	7	0	15	48	22	11	4
13	7	22	56	15	7	0	30	52	7	7	4
14	7	52	33	11	4	0	59	41	0	0	0
15*	8	4	4	0	63	30	0	0	7	67	26
16*	8	0	0	4	63	33	4	0	7	56	33

*Reversed items, with distributions close to 5 desirable.

The Percentage Comparison of Choice Distributions for
the Knowledge Section of Pre and Posttest

Pretest Cognitive Domain								Posttest Cognitive Domain				
Item	Chapter	Correct Response	Omit	A T	B F	C	D	Omit	A T	B F	C	D
17	3	C	15	4	26	56	0	22	11	15	52	0
18	4	A	7	63	4	4	22	4	67	11	0	19
19	3	B	7	0	4	4	19	11	0	78	0	11
20	3	B	30	0	52	0	19	11	4	63	7	15
21	2	C	15	74	0	11	0	11	74	0	15	0
22	5	B	19	56	26	0	0	19	37	44	0	0
23	8	B	4	4	70	0	22	11	0	81	0	7
24	6	B	11	11	33	0	44	7	7	37	4	44
25	6	B	7	15	52	4	22	7	11	63	15	4
26	4	C	4	11	15	63	7	26	7	7	59	0
27	5	B	4	4	81	7	4	7	4	78	7	4
28	2	D	7	4	4	26	59	4	7	4	19	69
29	1	F	0	89	11	0	0	0	85	15	0	0
30	1	T	0	22	78	0	0	0	33	67	0	0
31	5	T	0	78	22	0	0	0	89	11	0	0
32	1	T	0	96	4	0	0	0	100	0	0	0
33	7	T	0	93	7	0	0	0	100	0	0	0
34	7	F	0	48	52	0	0	0	56	44	0	0
35	8	F	0	78	22	0	0	0	93	7	0	0
36	4	F	0	56	44	0	0	0	56	44	0	0
37	8	T	0	96	4	0	0	0	100	0	0	0
38	7	T	0	78	22	0	0	0	93	7	0	0
39	2	T	0	78	22	0	0	0	89	11	0	0
40	6	F	0	67	33	0	0	0	52	48	0	0