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Evaluation of occupational child care programs in Iowa

Rose Abiodun Iyewarun

Iowa State University

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Evaluation of occupational child care programs in Iowa

Iyewarun, Rose Abiodun, Ph.D.

Iowa State University, 1987
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Evaluation of occupational child care programs in Iowa

by

Rose Abiodun Iyewarun

A Dissertation Submitted to the
Graduate Faculty in Partial Fulfillment of the
Requirements for the Degree of
DOCTOR OF PHILOSOPHY

Major: Home Economics Education

Approved:

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CHAPTER I. INTRODUCTION

Of mothers in the labor force in 1985, 60 percent had children 3-5 years of age, and 50 percent had children under 3 years old. Among married couple families, with both parents working, 51 percent had children under six years of age (U.S. Department of Labor, 1987). This increasing number of working women with young children indicates that more and more child care services outside the home are needed to care for those children. Thus, a growing number of researchers is looking at the increasing needs for day care and its effect on the development of children.

Studies on the effect of day care on the development of children have focused on social, emotional, cognitive, and language development. However, most of the research reported in those areas included reviews, comparison studies on home and center reared day care children, day care environment, and components of quality child care and day care. The studies have also included training programs developed and monitored by professional groups concerned with child care. The Child Development Associate National Credentialing Program (CDANCP), which is responsible for the Child Development Associate (CDA) Competency Standards, is an important example.

Another group that prepares child care workers has not studied recently the effectiveness of its programs for helping students develop necessary competencies. The group includes the many teachers in the vocational home economics programs that are designed to prepare child care workers.
The programs are offered as occupational child care. Some are offered to out-of-school adults, but those of interest in this study are programs offered in secondary schools and in community colleges. They are ordinarily two-year programs, although the first year may be taken in a consumer and homemaking education program.

Studies of these programs are limited, and those in the literature were conducted in the 1960s. Nelson (1970) cited Cozine's study that developed and evaluated curriculum materials for three home economics courses as a basis for developing programs that provided gainful employment for the students. One of the three was child care. In an earlier study on the progress of secondary school students in occupational education, Nelson and Jacoby (1967) found that students in child care services had interest in child care training, and were ready to assume jobs in the field.

Despite the recognized interest of students in child care training, recent publications on evaluation of vocational programs designed to train or prepare child care service workers were not available. Although evaluations of classes that were designed prepare students for parenthood, available materials on evaluation of home economics training program dealt with task analysis, scope and sequence, standards, and curriculum materials. These are useful in preparing students for occupations that require home economics knowledge and skills, but do not include assessment of students' achievement, attitude, and performance on the job.

The primary purpose of this study was to examine the achievement, attitude, and performance of students in occupational child care programs
in Iowa, and to determine the occupational status of the same students six months after graduation. Programs in the study included those in both secondary schools and area community colleges.

The objectives of this study were to:

1. determine the effectiveness of occupational child care training programs in Iowa by examining the achievement, attitude, and performance in child care settings of students in occupational child care programs,

2. evaluate the effectiveness of child care training programs in occupational home economics in Iowa by assessing the occupational status of graduates in child care services six months after graduation, and

3. make recommendations for occupational child care training programs in Iowa.

Definitions used in the study are listed below:

1. Child day care: A place that provides care, supervision, or guidance of children by persons other than the parents or another in the children's homes on a regular basis.

2. Family day care: A private home that provides child day care to six or less children, including the nonschool age children of the provider.

3. Group day care: A facility that provides child care to 11 children at any one time, and six of the children could be under six years of age.

4. Vocational home economics programs: Organized home economics programs that are directly related to preparation of students with
specific job skills that require less than a baccalaureate degree for paid (home economics occupations) or unpaid (occupations of homemaking) employment.

5. **Occupational child care programs:** Instructional programs that prepare students for the occupation of child care worker.

Assumptions underlying the study were the following:

1. The subjects would give complete and honest responses to the evaluation materials.
2. Programs would be sufficiently similar that data from different schools could be merged.

Limitations of the study were the following:

1. The study was limited to students in their final years of study in child care service programs in Iowa in the fall of 1986.
2. The follow-up on occupational status was limited to those students who after graduation were employed in child care occupations.
CHAPTER II. REVIEW OF LITERATURE

The purpose of this chapter is to review literature pertinent to vocational home economics education programs that prepare workers for child care services. Included are the need for child care outside the family, the effects of such care, and the use of the information in designing educational programs.

The chapter focuses on five major sections. The first section examines studies that reveal the increasing number of women in the labor force, which leads to the increasing need for child care services. It also includes other groups of people needing child care services.

Section two addresses the effect of child care on the development of children in the areas of social, emotional, cognitive, and language development. General studies on aspects of social, emotional, cognitive, and language development of children in day care and in-home care were reviewed, and appropriate ones were reported. Literature on the effect of day care on family was also reviewed and reported.

Major components of a quality child care program are identified and discussed in section three. Emphasis is on elements such as physical environment, health/wellness, nutrition and safety, staff qualification and development, staff-children interaction, and staff-parent interaction. References are made to national agencies that are concerned with the quality of child care programs.

Studies that dealt with both the national and state involvement in child care training programs were reviewed in section four. Those that contained information relevant to this study are discussed. These include
the outline presented by the Child Development Associate (1984) Competency Standards, the standards of the National Association for the Education of Young Children, and standards and curriculum materials developed by individual states.

Studies on child care training programs which dealt specifically with home economics occupational child care training programs are presented in section five. Literature on evaluation of occupational child care programs in vocational home economics that are pertinent to this study are reviewed and discussed.

Need for Day Care

Knowledge of development of children during the early years has increased tremendously in the past few decades. Merriam (1959) suggested that one way in which a community may put such knowledge to use is by giving top priority to any service for the young child. Day nursery or day care centers are considered as part of such services. According to Merriam, day care serves the young child during years which are of utmost importance for his/her individual growth and when the child is ready for a group experience beyond the family. However, Bradley (1982) pointed out that day care was poorly thought of and often neglected before 1960. Today, the situation has changed markedly. More knowledge of day care has made people become more comfortable with its use and services (Bradley, 1982). This increase in day care being provided by nonrelatives outside the child's own home includes family day care and day care centers (Jones & Prescott, 1982).
Family day care refers to child day care by an individual in a private home with only six or fewer children including the provider's own children who are not in regular school (State of Iowa Department of Human Services, 1986). Day care centers for this study refer to supplementary child care services beyond in-home care by parents.

The labor participation of mothers with children under six years of age is expected to continue increasing. The 1977 figure showed an estimate of 17.1 million preschool children in the nation, of whom 37 percent had mothers in the labor force, representing 6.4 million (Hofferth, 1979, p. 651). Iowa data for 1980 revealed that 66 percent of mothers who worked outside the home had school-age children, while 49 percent of mothers in the labor force had children under six years of age (U.S. Bureau of the Census, 1983).

In a more recent study on Iowa, Fuqua and Labensohn (1986) found that out of the families that use child care services, 92 percent used the services because the mother worked outside the home. Of those working, 74 percent had full-time jobs. At the national level, of married couples with both husband and wife working, 51 percent had children under six years of age (U.S. Department of Labor, 1987).

Literature revealed other categories of families needing day care. They included upper class women (Davis & Solomon, 1980) and single parents (Nakamura, McCarthy, Rothstein-Fisch, and Winges, 1981).

In the study of upper middle class women in the labor force who need day care, Davis and Solomon (1980) found that out of 1,155 households representing 2,049 children, 70 percent needed day care for employment
related reasons, 11 percent needed it in order to pursue educational or training opportunities, 7 percent wanted to engage in volunteer activities, and 11 percent needed it for the child's enrichment or parents' personal reasons. Of the households that expressed a need for day care, 37 percent or 244 were unable to find satisfactory arrangements.

Concerning the single parents' needs for day care, Nakamura et al. (1981) identified single parent households as those in greatest need of child care services. Single parents showed the most rapid increase when compared with other family categories needing child care services (p. 30). The 1975 national report on single parents cited by the authors revealed that 14.5 percent, which represented almost one in every seven children under three years of age, lived in a single parent family. In addition, 50 percent of single parent mothers with children under three years of age were reported being in the labor force. Among those employed, 77 percent were reported working full time (p. 30).

Effects of Day Care on Development of Children

This section examines important areas in which day care contributes to children's development. Illustrative studies which dealt primarily with social, emotional, cognitive, and language development of children in day care and in-home care were reviewed, together with the effect of day care on families.

In an extensive review of day care, Belsky and Steinberg (1978) expressed concern about the increase in day care needs of children, due primarily to the increasing number of parents in the labor force. These changes in parents' lifestyles seem to contribute to an increased need for
short- and long-term child care programs. Belsky and Steinberg (1978) stated: "These changes have generated a great deal of concern in the minds of policymakers, program administrators, human developmentalists, and parents about the short- and long-term consequences of day care" (p. 929). In an attempt to provide information to address these concerns in part or whole, the authors focused their review on the consequences of day care on the child's social, emotional, and cognitive development.

**Social development**

On social development, Belsky and Steinberg (1978) reviewed studies that focused on relations of day care children with peers, and those that dealt with social maturity. For example, one of the most comprehensive studies on social development of day care children cited by Belsky and Steinberg (1978), was the Schwarz, Strickland, and Krolick (1974) study. The data consisted of ratings of 19 matched pairs of 3- to 4-year-old children on nine behavioral scales. The experiments were conducted four months later. The result indicated that (1) day care children exceeded remarkably their home-reared counterparts in aggression both physically and verbally towards their peers and adults, and (2) day care children were found to be less cooperative in relation to grown-ups, but engaged in more running about as opposed to sitting in one place.

In a more recent study, Clarke-Stewart (1981) conducted an observational and experimental study on day care and home-reared children, to determine the effect of day care programs on the social development of children. Ten social development variables, compliance, and prosocial behaviors were higher for children with babysitters and lower for those in
the center programs. The highest increase was reported on cooperation with an unfamiliar peer among children who attended full-time center care (p. 241).

**Emotional development**

In the review of studies that examine the impact of day care on the child's emotional development, Belsky and Steinberg (1978) focused on categories of investigation that showed differences in attachment behavior between day care and home-reared children when exposed to a strange situation, and those that dealt with impact of day care on mother-child relationship. They found neither positive nor long-term negative effects on day care and home-reared children in a strange situation. The reason was attributed to the use of data on a wide range of children. Also, the authors did not find evidence on the effect of day care and attachment behavior on mother-child relationship. They did not find any information that indicated a decrease in child's preference for his/her mother when exposed to day care experience. In their review, however, the evidence showed little support for claiming that day care disrupts child-mother ties, especially when unusual procedures are used in unfamiliar settings with strange adults. They concluded that those high-quality centers would not necessarily replace the relationship the child has with his/her mother.

Rubenstein and Howes (1979) studied day care with a different perspective from that of a university setting. Their study was on community-based day care that was designed to provide working parents of young children the type of care their children needed and, at the same
time, different from the university-based day care settings. It was a type of group care arrangement that they identified as being available to more young children for social and emotional development.

The authors conducted a comparison study between infants participating in community-based nonprofit centers located in churches or separate facilities and those in the home-reared group. Both groups were considered as middle class infants. The sample consisted of 30 infants who were between ages 17 and 20 months old. The 15 infants in the day care group were drawn from five participating centers, and 15 were in the home-reared group. Those in the day care group were cared for by their mothers before attending the day care, while the home-reared group received care from their mothers from the time they were born. The authors report that the two groups "were comparable in sex, age, ordinal position, family size, mother's and father's education, and father's occupation and religion" (Rubenstein & Howes, 1979, p. 4).

In the procedure, a 2-1/2 hour observation of each infant was conducted on each of two days, mornings and afternoons, for both the day care and home-reared groups. Toddlers in the home-reared group interacted together in each other's homes two or three times a week for 4-20 months. The home-reared children's mothers reported peer interaction among their infants. Measures used were caregiver-infant interaction, infant-peer interaction, infant-toy interaction, and infant effect (p. 4). Time sampling was developed and used to measure caregiver-infant interaction while subject's behavior to peers was used in infant-peer interaction. A five-point scale score was used for infant-toy interaction, and infant
effect was measured with crying, positive effect, and self-centering behaviors.

Reliability estimates were based on 20 subjects of which 10 were prior to data collection and 10 during data collection. Interobserver reliability was established with correlation coefficient for each measure. Median established ranged from .85 to .97, with the caregiver-infant and effect measures higher than the infant-peer interaction and infant-toy measures.

Rubenstein and Howes (1979) reported that infants in day care cried less and their developmental level of play was higher than the home-reared ones. More negative effect was reported on caregivers and infants at home. The authors mentioned that infants could benefit from day care through effective peer interaction.

The Rubenstein and Howes (1979) study was an extensive one with several measures. The differences that they found focused more on the aspects of social interaction between adults and infants. In 1981, Rubenstein, Howes, and Boyle did a follow-up study on Rubenstein and Howes's 1979 sample with a focus on the emotional development of the child. At the time of the follow-up study, the children who were in the original sample were 3-1/2 to 4 years of age. Of the original 30 children, 23 were available for the follow-up, 10 in day care, and 13 in the home-reared group. Nine of the children in the day care were in the same day care center. One of them left at the age of 2-1/2 and was under the daily care of babysitters until the follow-up took place. Both groups
of children had moved from infant care to preschool/nursery school at age 2-1/2 and 3, respectively.

The measures used included a recorded interview of the children's mothers on 12 dimensions which indicated problems in emotional development of the child, using a structured interview. The measures included: behavior problems, compliance, separation behavior, anxiety during testing, greeting behavior, attachments, maternal behavior, speech and language development, styles of response to failed test items, and background history (pp. 211-212). Individual ratings on behavior problems were summarized with the use of a three-point scale (0-2) on which behavior problems with a high score showed "more numerous and more severe behavior problems" (p. 211). Correlations were used to estimate interobserver reliability, which ranged from 0.65 to 1.00 with a median of 0.83, when percent agreement was used on each scale (p. 212). The overall "Behavior Problem" reliability score was 0.92 (Rubenstein et al., 1981).

Findings showed that day care children had higher scores on two of the three language measures. On emotional status, day care children were both behaviorally and verbally less yielding to their mothers than the home-reared children, representing 87% (p<.05) and 38% (p<.05), respectively. Also, day care children showed more assertiveness to the examiner than home-reared, with 60% versus 15% (Fisher Exact Test, p<.04) (p. 213). Rubenstein et al. (1981) concluded that the two groups had similar behaviors during reunion with their mothers after their hours of separation both in degree of anxiety shown during testing and in their level of behavior problems. However, they did not find any information
that suggested how attendance in day care might affect the children's overall emotional or language development.

**Intellectual and language development**

On the question of whether or not the standards of a day care program had an effect on children from advantaged families, Belsky and Steinberg (1978) found that programs that met both the federal and the state standards had little effect on children from advantaged families (p. 935). However, test scores of disadvantaged children in center-based programs appeared to decline less rapidly than scores of similar children not in programs. They found no information, however, on how the quality or type of day care programs might affect long-term intellectual development of the child from an advantaged family.

The effect of day care on children's language development was studied by McCartney (1984). The author focused on whether or not the quality of the environment in day care affects language development of children. Nine day care centers in Bermuda were chosen to participate in the study. The sample consisted of 166 children with ages between 36 and 68 months old, and their parents. The children had attended the participating centers for 6 months or more.

Three measures were used to assess the aspects of day care quality: The day care environment, children's intellectual and language development, and family background and home environment. The day care environment was assessed by using ECERS (Early Childhood Environment Rating Scale) to measure not only such things as personal care, furnishings, and creative activities, but also language and social
development of children in the setting. Another aspect of the environment was the assessment of verbal interaction of children with caregivers and peers. Target children were observed and coded on the basis of being an initiator or a respondent in conversation. Interrater reliabilities were estimated at .82 for items on ECERS, and ranged from .92 to .98 on verbal interaction.

In assessing the intellectual and language development, McCartney (1984) used three methods: the Peabody Picture Vocabulary Test (PPVT-r) on verbal intelligence, the Preschool Language Assessment Inventory (PLAI) on standardized test, and the Adaptive Language Inventory (ALI) on caregiver ratings (p. 247). In measuring the skill in language use, three experimental communication tasks were used: re-telling a story, telephone conversation, and finishing the story. Children were rated not only on comprehension and the amount of words they could produce, but also on their level of production and spontaneous verbal ability. The interrater reliability between these four scales was high, ranging from .71 to .79.

Although McCartney (1984) used family background as a control variable, the effect was not reported. However, demographic information was used to assess family background, while home environment was assessed with parent interviews.

In analyzing the quality of day care, McCartney (1984) showed that the environment had a positive effect on children's intellectual and language development. Children can do better on tests of language development in an environment which facilitates conversation, is open to visitors, and has less distraction and free periods (p. 256). That is,
the better the quality of day care, the better the language development of children.

Effects of day care on the family

Belsky and Steinberg (1978) felt that research on day care tended to focus upon the child receiving the experience. They argued that effects of day care need to be considered more from an ecological point of view that would include findings regarding the impact of day care on parents, siblings, the family, the school, the community, and the society (p. 942). They reviewed the research that was primarily concerned with examining what impacts day care has on the family. The authors declined to give any definite conclusion because they felt that the findings were not consistent, although the inconsistency of the findings might be a result of the issues addressed and/or types of data used. To mention a few, some studies reviewed focused on cognitively oriented day care center, unstructured and highly-structured laboratory situations, maternal rehabilitation program to promote school achievement for school mother's children, and number of school diplomas earned by mothers whose children were home-reared and in university day care center. However, Belsky and Steinberg (1978) referred to an unpublished study conducted by investigators in Pennsylvania. The study showed that satisfaction with employment increased as a result of increased satisfaction with child care substitute (p. 943).
Components of Quality Child Care Programs

Studies of day care reviewed above emphasized needs of children in day care for physical, social, emotional, and cognitive development. Moreover, children in day care settings are open to opportunities which include developing and maintaining relationships with each other, discovery of learning, play and exploratory activities, and maintaining balance between new and familiar situations.

In order to make full use of the above mentioned opportunities, a good day care program is necessary. Such quality programs require emphasis on physical environment; health/wellness, nutrition, and safety; staff qualification and development; staff-children interaction; and staff-parent interaction.

Physical environment

The physical environment should be designed to provide opportunities for children to learn effectively. Endsley and Bradbard (1981) specifically state the need to adapt space in day care centers to meet, and/or serve various purposes. An illustration of adapting space for different purposes is the use of low dividers, platforms, or partitions that caregivers can rearrange and supervise easily (pp. 62-63). Examples of space needs include interest areas where children can engage in specific activities of their choice, manipulative and block areas which can foster learning and promote cooperation and interaction among children, large motor areas for muscle development, and subject areas for learning and discovery (pp. 62-70). The outside of a day care center should have a good outdoor play area. The area may be furnished with

...
homemade materials, which according to Endsley and Bradbard (1981) cost less, and provide opportunities for caregivers and the children to use "throw-aways" in creative ways (p. 71).

Jones and Prescott (1982) identify a good environment as one which fosters feelings of creativity and provides children with effective learning activities. Such activities include preparation of play materials/equipment, food preparation and serving, cleaning up after meals and play, and storing away materials/equipment as needed (p. 22).

Health and safety

Healthy and safe environments constitute an important aspect of quality day care centers. Parents expect day care workers/caregivers to be knowledgeable about making day care safe and healthy for the children.

The National Association for the Education of Young Children (NAEYC, 1984) describes essential practices which are considered safe and healthy for child care programs. Such practices include maintenance of legal health requirements, keeping of health records, careful supervision of children and hazardous elements, observing signs of illness, and proper use of materials/equipment of the center (pp. 28-34).

Endsley and Bradbard (1981) outline the methods that are pertinent for caregivers in order to maintain safe and healthy environment for children. This outline includes knowledge of local and state health and safety standards, incorporating health and safety education into children's learning experiences, debating health and safety issues, and working with parents of the sick children (pp. 39-53).
Nutrition and food safety are important aspects of the health/wellness of day care/preschool children. Knowledge of nutrition for day care children would depend very much on the types of education the children acquire from caregivers. According to Marion (1976), preschool nutrition education should include helping children (1) to choose nutritious food for meals and snacks, (2) to develop positive attitudes toward foods by being aware of foods that promote good health, (3) to develop appropriate patterns of accepting food, and (4) to learn about food through actual working experiences that involve planting, harvesting, and preparing food from what was planted (p. 12). She suggests that nutrition education activities be incorporated into mealtimes and into the curriculum in various areas.

Staff qualification and development

Staff quality has been described to be "the most important determinant of quality of an early childhood education" (NAEYC, 1984, p. 18). The level of professional responsibility, title, and training required were aspects for consideration in determining staff qualifications. Child care professionals with the baccalaureate or higher degrees are likely to supervise and train those with Child Development Associate (CDA) or Associate of Arts (AA), depending on the center. They may be qualified to work as supervisors and/or assistants under the supervision of a professional staff. The high school graduate with the title "teacher assistant" falls under direct supervision of the professional staff (p. 19).
In order to maintain the necessary standards and skills in working with children and their families, training and staff development programs are essential. NAEYC (1984) suggests development programs such as workshops, seminars, visits to other child care programs, and in-service training (p. 19).

Quality of education of staff has been found to affect children's performance. Endsley and Bradbard (1981) specifically stated that caregivers who had a two-year vocational training related to caregiving tended to be more effective than those with child-related training such as in elementary school teaching. Therefore, they suggest that more emphasis be placed on child-related caregiving training in day care settings (p. 111).

Ruopp et al. (1979) discuss a study on the effect of caregiver qualifications on children. The authors found that caregivers with specialized child-related education/training had more social interaction with children, while the children complied and cooperated more than those in other classes. Results also indicated that children in centers where caregivers had child-related training were involved more in tasks and/or activities of the center, and scored more points on tests than children in classes where caregivers had no such training (pp. 98-100).

Staff-children interaction

Interaction between staff and children provides opportunities for children to develop feelings of security and being loved. NAEYC (1984) outlines the characteristics of interaction among caregivers and children that can influence children's understanding of themselves and others.
Examples include caregiver's personal respect, warm attitudes, positive support, and being responsive to the children's needs (p. 8). Interaction initiated by caregivers may provide opportunity for children to develop social skills, intellectual growth, and attachment between the caregiver and the children.

Endsley and Bradbard (1981) relate to the importance of interaction which enhances feelings of love and security between children and their caregivers. The authors refer to such love and security as being a source of establishing the type of attachment which exists between caregivers and young children. This type of attachment is said to provide opportunities for infants and young children to discover and explore their immediate environment. Endsley and Bradbard (1981) also discuss elements of quality interactions through which caregivers can promote attachment and competency for growth. The elements are illustrated in a model which states that caregivers who have warm and responsive attitudes promote attachment, which helps children to explore, and in turn grow in competency (pp. 90-91).

**Staff-parent interaction**

In order for a program for children to succeed, such a program must recognize the importance of children's families and establish effective working relationships with them. NAEYC (1984) recommends that parents be well-informed, and welcomed as observers and contributors to the program. Caregivers may facilitate these relationships through information about the center's operating procedures, orientation for the children and
parents, visits to the center, oral and written communication of the center's happenings, and conferences (pp. 15-17).

Training of Child Care Workers

Importance of training

The value of training for day care workers is recognized by people and agencies that are concerned with child care services, but differences exist among states on the requirements in preparing workers for various child care settings. Some states require the baccalaureate degree for those with teaching responsibilities; others require only that the child care workers be 16 years of age, with no training experience required. Frequently, child care workers have only a high school diploma as the highest level of educational attainment (Berk, 1985, p. 104).

National training programs

At both the national and state level, efforts are being made to provide good child care training programs for child care workers. Among those efforts is: "The Child Development Associate National Credentialing Program (CDANCP), which is a major national effort to improve the quality of child care. Its focus is on the skills needed by child care providers," and it is based on the Child Development Associate (CDA) Competency Standards (CDA, 1984, p. 1).

The Child Development Associate (CDA) started in 1979 and has played an important role in collaborating activities/programs of child care between the professionals and the federal government. The CDA Competency Standards identify the skills the child care workers need for providing
quality care. They also serve as criteria for a child care provider's performance with children and families (p. 1). In a recent publication, the CDA (1984) outlined six major competency goals, four of which are pertinent to this review.

The first goal is that a safe and healthy environment be provided for the children. Such an environment would include prevention and/or appropriate care of injuries and illness, good health practices including nutrition, and opportunities to learn through a variety of experiences (pp. 10-12).

Other important aspects are the physical and cognitive development of children. This second goal provides opportunities which include large and small muscular activities, coordinated movements, and ways of introducing children to new ideas. Other areas include observation, daily planning, verbal and nonverbal ways of expressing thoughts and feelings, creative abilities of children, and activities which could enhance them (pp. 13-16).

The third goal is development of self-esteem. This goal emphasizes the types of developmental opportunities that could be given to children as they develop knowledge and understanding about themselves. Such development would include new abilities in performing various activities, experiencing success and failure, and individual and group learning activities which enhance appropriate and acceptable behaviors (pp. 17-19).

Another important area is the establishment of good relationships with families in which the children being cared for live and grow. The types of relationship the author describes in the fourth goal include free
and open communication, recognizing children’s primary caregivers (parents, stepparents, grandparents, brothers, sisters), cultural and social background, and parents’ involvement and participation (p. 20).

The above outline could serve as a guide for establishing child care training programs for workers. However, how best such programs might serve the intended use might need further investigation. Honig (1983) discusses the importance of child care training programs and how best they could be accomplished. The author describes basic knowledge that is necessary for establishing good training programs for training infant workers in day care. Such knowledge includes goals of infant development, research about rearing of infants in a variety of ways which could include homes that give children appropriate care, and an environment that encourages information-sharing, learning, and reflection of attitudes towards infants. Other important aspects are integration of new knowledge into decision making and daily caring practices with children (pp. 121-122).

Honig (1983) describes two important areas that are pertinent to good child care training programs. The first area includes theories that provide knowledge to help child care workers relate their own behaviors to the developmental stages of growth of the children they might be dealing with. An example of such theories would be Piaget’s stages of sensorimotor and preoccupational development of children. Secondly, the author emphasizes the importance of research findings which deal with securing of attachment. Areas of attachment that are discussed include those dealing with emotional stability, problem-solving ability, and
cooperation with others. Other areas discussed are (1) quality and styles of rearing children, (2) natural ability for acquiring language experiences, (3) response to body action, (4) acceptable cultures and family styles, and (5) knowledge of factors affecting nutrition and health (pp. 123-130).

**Training programs in vocational home economics**

Most of the above concepts are related to the National Standards of CDA, CDANCP, and NAEYC. States may adopt the national standards in operating child care training programs that are housed in colleges, secondary schools, and/or vocational schools. This review focuses on child care training programs that are offered as occupational home economics programs in secondary school and community colleges. They are a part of vocational home economics.

Such a program was reported in the Illinois study conducted by the Demonstration Center for Child Care Training and the Illinois Office of Education. Almy (1981) outlined the programs as being for both secondary and vocational schools in on-site and/or off-site centers. The course offerings include operations of preschools and early childhood/child care programs as well as study of the development of children. The centers provide students not only opportunities for study but opportunities for employment. Findings showed that 31 percent of the students who completed the program were employed in the field of child care, while 21 percent pursued further training in the same area (p. 230).

Almy (1981) also notes that community colleges play a major role in the training of day care workers through their child development or early
childhood education programs. Such training prepares students for an associate degree in child care. The students had the opportunity to apply knowledge in practical settings through student teaching and internships. Students also are employed and receive field experience in centers where they are enrolled (p. 231). The Paramount High School's Vocational Child Care assistant program is an example of a similar program which provides skills and experiences in the areas of child growth and development, personal relationship between parents and children, developing behavior patterns that are acceptable, child abuse, use of various teaching techniques and materials, and community field training (Kassap, 1986).

During the first year of the program, Kassap (1986) reports that students are given an opportunity to begin training in the community after six weeks of classroom work. Their field experience includes training in day care centers, private preschools, Head Start Programs, elementary schools, special education children's programs, and as aides in recreation programs. These community-based experiences provide actual working experience with children (pp. 42-43). Under supervision, students assume teacher aide responsibilities such as helping children adapt to day care learning environment and taking part in various activities.

At the senior level, students are given the opportunity to choose and work in their special areas of interest in preschool, elementary school, and in special education child care programs. Students also are given an opportunity to specialize in training for work with mentally retarded children, sign language, and work with children in hospital schools (Kassap, 1986, p. 43).
Curriculum materials developed by individual states are similar to the concepts and components described above. Important components such as staff-children interaction, staff-parent interaction, curriculum, staff qualifications and development, physical environment, health and safety, nutrition and safety, and evaluations are usually included.

Evaluation of Occupational Child Care Programs

Occupational child care programs are a part of vocational home economics. Some are found in secondary schools, others are in post-secondary schools. Although some programs are found in less formal classes such as adult education, this section is confined to the programs in regular school schedules. Students who participate in occupational child care programs are expected to have skills and experiences that prepare them to be child care workers at a level appropriate to their training.

Need for program evaluation

Evaluation of programs in vocational education is called for by legislative mandate as well as by the usual need to monitor a program for the purpose of identifying ways by which it can be improved. For example, the Carl D. Perkins Vocational Education Act (P.L. 98-524) requires states to monitor their programs, including the success of graduates in their workplace. Much of this evaluation is done as a follow-up of students and employees, but such studies often do not differentiate among various vocational programs offered. For example, Iowa follow-up (1984) on students' perception of vocational education did not include data on child
care programs specifically. Thus, there is a need to look more closely at specific programs; in this case, child care.

Although studies showed that students who complete occupational child care programs found employment in child care related programs (Almy, 1981), data on effectiveness as measured by performance of graduates in this specific area are not readily available. However, evaluation of some classes which are designed to train parents of older students does exist. These classes are in the Consumer and Homemaking Education program, also in vocational home economics.

An example of such study was a follow-up study conducted by McClelland and Hughes (1982). Their study evaluated the effectiveness of parenthood education in eight secondary vocational home economics programs. Of the 26 females selected, 15 had studied parents, but 11 had not. The subjects ranged from 20 to 22 years of age, and were mothers of children between 12 to 24 months old. Behavioral data were collected through the use of combined observation and interview techniques. The Rating Scale for Parenting Behaviors (RSPB) was established and used for assessing parent’s ability in managing the physical environment of the child and interacting with the child. The interrater reliability was calculated and it ranged from .83 to .98. Results showed that parents who had parenting education did better on parental care of their children than the comparison group who had not had such a course (McClelland & Hughes, 1982).
Methods of program evaluation

Studies pertaining to program evaluation revealed several methods of evaluating programs. Specifically, methods of evaluation for occupational programs which include child care may be the use of standards of accreditation criteria and procedures, state standards, curriculum based on scope and sequence, and curriculum guides.

The standards, for example, are available in specific areas of emphasis. One of the specific standards is the accreditation criteria and procedures by the National Association for the Education of Young Children (NAEYC, 1984), which is a form of standards for assessing the effectiveness of its goal for children, staff, and parents (p. 38). It is based on a professional point of view on child development and day care centers.

Another example is the Iowa standards for quality vocational home economics education programs, which focused on among other things staff and staff development, curriculum, and evaluation. It specifically states that "the standards are appropriate for specialized vocational home economics programs in the two-year post-secondary schools, home economics-related occupational programs in secondary schools, consumer and homemaking programs, and adult consumer and homemaking or occupational programs" (State of Iowa Department of Public Instruction, 1985b, p. 3).

Curriculum is subject to revision, improvement, and evaluation in order to assure that activities and experiences being provided are appropriate to meet stated goals. The Iowa scope and sequence which dealt with subject matter content focused on knowledge and skills that are
required in home economics subject areas, which could reflect conditions in society (State of Iowa Department of Public Instruction, 1985a). It is recommended for local and state use, upon which curricular activities could be planned and organized to meet the needs of the audience. This is achieved through course offerings in middle and junior high schools, senior high schools, community colleges, and various programs for those who are not in school (State of Iowa Department of Public Instruction, 1985a, p. 6). Levels I and II are included in the third level (occupational) which focuses on skills needed for employment; for example, in the area of child development.

The Illinois State Board of Education (1982) also emphasized development of programs, sequences for preparing learners for work in the home and also as a wage earner. On the child care program, for example, the guide identified skill development areas for 11th and 12th grades which include child care occupation courses. Both grades have courses in home economics and related occupations. The approach to the child care program is sequential. The 9th and 10th grades have year-end semester courses, respectively, and those take them through exploratory/orientation processes. The 11th and 12th grade courses explore skill development for work in day care centers or child care related occupations.

Evaluation studies

In review of the literature, many descriptions of child care programs were found, and selected ones were reported. Notes were also made of standards and curriculum materials available. Many states have standards which focus on content and process, but not on student achievement and
performance on the job. However, a search for evaluation of vocational programs designed to prepare child care service workers yielded almost nothing in the many publications reviewed. Thus, this section includes a recent general evaluation report and two studies from the 1960s.

Reviews and syntheses of research in home economics education were provided in 1970, 1979, and 1986. Two earlier evaluations of occupational courses in home economics were conducted in 1968 and 1967. The 1968 study cited by Nelson (1970) was conducted by Cozine, while the 1967 study was conducted by Nelson and Jacoby.

Cozine's study focused on developing and testing materials for curriculum in three home economics courses, and to make recommendations for policies and procedures in planning and developing programs for students to have gainful employment (p. 6). Child care was identified as one of the three courses. Three curriculum guides were produced and evaluated by the students, parents, teachers, and local administrators. Three policies were found adequate and supported as a result of the study. They included the need for (1) establishing advisory councils for training programs, (2) maintaining close and continuing relationship between the teacher and the employers who provide work experience for students, and (3) evaluation and revision of the employment courses by the teacher in accordance with the competencies the employers might need (pp. 6-7).

Nelson and Jacoby (1967) focused on students' progress in home economics occupational education with emphasis on knowledge, job competencies, and their attitudes toward work, and to determine the relationship between students' course work and their performance on the
job. The authors also considered provision of information on wage earning programs in secondary home economics, which teachers, administrators, curriculum coordinators, guidance officers, and the institutions that prepare teachers might need for such programs (p. 10).

The sample consisted of 12 classes. Seven classes trained students for jobs in food service, two provided students with orientation to work, and three trained child care center aides. The last three are of importance to this study.

In the case of child care, findings showed that students had positive attitudes toward school, home economics, working with others, and academic abilities. The authors reported that the programs helped to keep potential dropouts in school, that students were interested in occupational training, that self-confidence was increased, and that students believed they were ready to assume entry-level jobs in child care (p. 159).

Nelson and Jacoby (1967) reported problems with the follow-up. The sample included 14 of the 20 students in the child care study for the follow-up. Of the 14 students, only five were in child care occupations during the summer, while others were not. Most of the students returned to school in the fall. Further, the follow-up study was conducted during a limited period of time, and therefore did not give a complete picture of the impact of the child care occupational courses offered as preparation for employment (pp. 137-138).

Nelson (1979) cited a follow-up study which was conducted by Butler. The study was on child care service programs in New York State, and how
successful they were in preparing students for job performance on the basis of the training opportunities provided. Out of 494 questionnaires which were sent to former students and their employers, 378 responded. Of the 378 who responded, 12 percent found employment in child care, 38 percent were employed in other areas, and 50 percent were unemployed. The study indicated that graduates of both the one-year and the two-year high school programs were adequately prepared to work in child care services with percentages ranging from 90 to 62, respectively. Also, the study revealed that those students who had the opportunity and had spent more time working with children found jobs in child care services, such as sitters in private homes and aides in group care situations (p. 95).

Way and Dougherty (1982) identified several state approaches to evaluation of occupational home economics programs. Approaches included students' participation, program process, general program outcome in employment, and students' involvement in further training. Student achievement and performance on the job were not identified as criteria.

As a result, Way and Dougherty (1982) pursued a specific study on conceptual framework for developing and implementing a secondary occupational home economics program evaluation plan. A total of 116 schools took part in the study. Of that number, 56 schools had occupational home economics programs and 60 were without. Emphasis of the questionnaires was on specific areas of concern for the evaluation plan, such as curriculum, administration, students, preservice, in-service needs of teachers, student organization (HERO), employer/community involvement,
budgeting, and facilities (p. 34). Questionnaires were sent to respondents through the local vocational education coordinators (LVCE). Rates of instrument returned ranged from 72 percent to 93 percent. However, returns from graduates was only 18 percent, while employers and instructors were 67 percent and 53 percent, respectively.

Data analysis was based on descriptive statistics using means, frequencies, and percentages for significant differences among those who responded. A final report was completed and submitted for review and modification by the project advisory committee and home economics teacher educators (p. 38).

Way and Dougherty (1982) established a conceptual framework for evaluating occupational home economics programs, which could be used to meet the need of special types of evaluation on vocational education service areas. In addition, they recognized that evaluation resources are limited, and will continue to be limited.

Summary of Review of Literature

Evidence documenting the need for child care programs of good quality has increased in recent years. For example, the increase in the labor force participation of mothers of young children has been accompanied by a shift from in-home child care to care outside the home. Examples of such outside care include family/group care, day care centers, and preschools. This outside-of-home care affects the development of children and the families of children. Studies reviewed showed a relationship between desirable effects on children and the quality of the program.
As the need for child care programs increases, the quality of such programs has become a concern, especially by parents who must depend on them. Requirements for a high-quality program include (1) a physical environment that enhances various activities, creativity, and effective learning, (2) health/wellness, nutrition, and safety which meet legal requirements for safe and healthy practices, (3) staff-children interaction which can create children's understanding of themselves and others, (4) staff-parent interaction in which the importance of children's families is recognized and effective working relationships are established, and (5) staff trained in child-related caregiving that provides knowledge and skills which meet established standards.

Efforts are being made at both the national and state level to provide effective training programs for child care workers. Programs of interest to this study were those below the baccalaureate level, offered in vocational home economics at secondary schools and community colleges. Curriculum materials developed for these programs by individual states are a major part of efforts being made. The components noted above form the basis for programs of high quality.

Programs in occupational home economics are evaluated on the basis of the curriculum materials noted and, in some states, on the basis of standards for vocational home economics. However, a search for evaluation of these occupational programs on the basis of student achievement yielded almost nothing in the many publications reviewed. An evaluation of secondary school training programs to prepare students for wage earning in
occupations related to home economics (Nelson & Jacoby, 1967) was the only study that addressed the effect of programs on students.

Thus, the literature review shows the need for current studies that assess the achievement and attitudes of students in child care training programs in vocational home economics. Such evaluation is a requirement of the legislation under which the programs are supported. Even though there are state evaluation efforts, they do not include an assessment of student achievement.
CHAPTER III. METHOD OF PROCEDURE

The major goal of the study was to provide program planners data for improvement of child care programs in vocational home economics programs in Iowa. The literature reviewed did not provide data on achievement and performance on the job by graduates in programs designed to train and/or prepare child care service workers. Therefore, this study examined the achievement, attitudes, and performance of students in occupational child care training programs offered in vocational home economics.

The objectives of the study were:

1. To determine the effectiveness of occupational child care training programs by examining the achievement, attitude, and performance in child care settings of students in the occupational home economics child care training programs.

2. To further evaluate the effectiveness of child care training programs in occupational home economics in Iowa by assessing the occupational status of graduates six months after graduation.

3. To make recommendations for occupational child care training programs in Iowa.

Selection of the Sample

At the initial stage, appropriate administrators from 13 schools (nine secondary schools and four post-secondary) that had occupational child care programs were contacted and were invited to participate in the study. Of that number, five secondary schools and four post-secondary schools participated with a total number of 84 students. There were 36
students from secondary and 48 students from post-secondary (community colleges). The 84 students who made up the sample were in these vocational home economics programs in their various institutions in 1986. All 84 were in their last year of an occupational child care program designed to prepare them to be child care workers in Iowa. The occupational programs were run for one or two years, but students in the one-year program had studied child development in a consumer and homemaking course as a prerequisite to the one-year occupational course.

Instrumentation

In preparing students to become child care service workers, three important areas which were pertinent to this study were derived from the available literature. They included (1) an achievement test which measured the extent to which students could comprehend, interpret, and apply information relating to classroom instruction, (2) an attitude inventory on students' feelings about children, and (3) a child care aide performance device to indicate the rating on the students' performance in a day care setting. The items used for the three areas were selected from the Home Economics Occupational Education Evaluation Devices (HEOEED), (1978) and from the collection of evaluation devices by Hughes and Njus (1982).

On the achievement test, five content areas were identified and were used with corresponding items. They included (1) leadership, (2) health and safety, (3) interaction, (4) equipment and supplies, and (5) arts and crafts. The performance device was designed to evaluate the competencies of child care service workers through identified responsibilities in six
content areas. Five were the same as identified for the achievement test above; the sixth content area was "routine."

The following specifications were developed to show specific representation of the items which related to the content areas identified for the achievement test and the performance device.

Specifications for Achievement Test and Performance Device for Occupational Child Care

<table>
<thead>
<tr>
<th>Content Areas</th>
<th>Achievement Test</th>
<th>Performance Device</th>
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<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Total</td>
</tr>
<tr>
<td>Leadership</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>Health and Safety</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>Interaction</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>Equipment and Supplies</td>
<td>8</td>
<td>3</td>
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<tr>
<td>Arts and Crafts</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Routines</td>
<td>17</td>
<td>3</td>
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Achievement test

Of the 40 items of the achievement test selected, 18 were from HEOEED (1978, pp. 41-55) and 22 were derived from the collection of evaluation devices by Hughes and Njus (1982) on development, care, and guidance of children. The 40-item multiple choice was developed to assess the
knowledge of the students in occupational child care courses based on the five major content areas listed above. Tests from which items were selected had been reviewed for content validity by experts in child development and for item construction by experts in evaluation. The reliability estimates ranged from .76 to .81. Each item is described below.

There were eight general development and guidance items. Of this number, three were selected from HEGEED (1978). Those three items focused on specific activities which influence a child's growth. They include why children take part in certain activities at a specific time of development, things that influence IQ test scores, and nursery schedules. The discrimination index was not given for one of the items. Two of the items had discrimination indices of .20 and -.40, respectively. (The item with -.40 was retained for its content.) The remaining items in this content area were selected from the collection of evaluation devices developed by Hughes and Njus (1982). The items assess ability to understand children, how children develop responsibility, what contributes to dramatic play in children, choosing toys for children, and the effect of teaching the child good habits. Item discrimination indices were not given for those five items.

Of the eight items on health and safety, five were derived from HEGEED (1978), and three were selected from the Hughes and Njus (1982) collection of evaluation devices. The five items from HEGEED (1978) on health deal with first aid, being sensitive to the child's physical condition, awareness of diseases that require isolation, caregiver
responsibility for children playing in an open area, and schedules for child care centers. Discrimination indices for the items ranged from .40 to .60; the discrimination index was not given for one of the items. Three of the eight items which were selected from the Hughes and Njus (1982) collection of evaluation devices focused on safety in relationship to the child's behavior while playing, toy safety, and approaches in providing for safety of small children. Discrimination indices were not given for the three items.

There were nine items on interaction. Of this number, two were derived from HEOEED (1978) and seven were selected from Hughes and Njus (1982). Two of the nine items relate to independence of the child and how to handle the situation in which the child reacts negatively to some particular foods. Those two items had discrimination indices of .00 and .40, respectively. Seven items focused on discipline, punishment, consideration for others, roles as future parents, toys, misbehavior of the child, and child's participation in activities. Discrimination indices were not given for those items.

Of the eight items on equipment and supplies, five were selected from HEOEED (1978), and three were from Hughes and Njus (1982). The five items from HEOEED (1978) relate to nursery school rules, a child's reaction to disliked material, desirable environment for children, equipment which enhances the child's play, and storage of equipment. Discrimination indices ranged from .00 to .80. The three items that were selected from Hughes and Njus (1982) focused on play materials that promote children's perceptual development, effective way of supervising children when playing
with large muscle equipment, and encouraging self-dressing.

Discrimination indices were not given.

There were seven items on arts and crafts. Of the seven items, three were selected from HEOEED (1978) and four were selected from Hughes and Njus (1982). The three items from HEOEED (1978) all assessed play materials. In spite of the discrimination indices of .00 to -.20, the items were retained. Four items that were derived from Hughes and Njus (1982) assess the roles of arts, music and games, and use of coloring books and drawings. Discrimination indices were not given.

Attitude inventory

The attitude inventory dealt with experiences with and reactions to young children of various ages. The inventory is from Grant, cited in HEOEED (1978, p. 1). The items in the device were reviewed by child development and evaluation experts for content validity, but there was some concern about selected items. The test-retest reliability, as reported by Grant, was .89.

Students were asked to respond to the statements which best describe their feelings toward dealing with children in their homes, neighborhood, public places, and/or elsewhere. Illustrative of the items are those that assessed working with young children, responsibility for children's behavior, and reaction to children's activities. Specifically, items 1, 2, and 11 focused on students' feelings toward babysitting and summer vacation jobs that deal with young children. Items 5 and 10 assessed the students' feelings toward crying and fussy children in different environments.
Follow-up questionnaire

The nine items for the occupational inventory questionnaire were formulated to seek information on job status and experiences of graduates after completing the occupational child care programs. Items 1 to 6 contained "yes" or "no" responses on what the graduates were doing. Items 7 and 8 contained questions on hours of work and wage earned per hour. Item 9 was an open-ended question that assessed what graduates liked about their jobs.

Performance device

Seven descriptive rating scales to measure performance developed by the HEOEED (1978, pp. 11-37) were used in the selection of items for the performance device. Of the seven descriptive scales, items used were selected from six of the scales based on six content areas which included (1) leadership, (2) health and safety, (3) interaction, (4) equipment and safety, (5) arts and crafts, and (6) routine.

The seventeen performance device items selected were from six of the seven descriptive rating scales of the evaluation devices HEOEED (1978) to evaluate performance of the students enrolled in occupational child care courses as related to job responsibilities. Each item was rated on a five-point descriptive rating scale as a single numerical point between Not Acceptable (1) and Very Good (5). Three levels of performance described include: level one, which described employee or student behavior that represented unacceptable performance; level three, which described adequate performance; and level five, which described excellent performance. Levels two and four were not described but provided
additional intervals by which the students/employee are rated. A brief description of each item follows.

Items 1, 2, and 3 derived from descriptive rating scale 2A, B, and E (HEOEEED, 1978, p. 11). They assess aspects of leadership role in planning and participating in suitable activities for children. The first one examines whether or not the activities selected meet the child's interest level, ability and stage of development; the second focuses on making suitable suggestions for suitable activities; and the third assesses whether familiarity exists between knowledge of subjects and techniques used in dealing with children. The discrimination index was not given for items 1 and 2. For item 3 the discrimination index was .37.

Items 4, 5, and 6 are derived from scale 3E, 4A, and 4E (HEOEEED, 1978, pp. 14, 21) and focus on health and safety in relation to the awareness of physical and safety condition of the child. Item 4 relates to child care aide's responses toward changes in behavior which are displayed by the child due to changes in physical condition. Item 5 assesses the responses to potential hazards which could result to accidents in play areas. Item 6 focuses on the responses to maintaining established health hazards. All three items had a discrimination index of .37.

Items 10, 11, and 12 are drawn from scale 3B, G, and Q (HEOEEED, 1978, pp. 15, 17, 19) and they assess the child aide's assistance with the daily routines. Item 10 rates voice volume in relation to normal and quiet voices while talking to the child. Item 11 focuses on assisting with meals and snacks. Item 12 relates to responses to methods which enhance
self-help. A discrimination index was not available for item 10; the index was .37 for both items 11 and 12.

Items 7, 8, and 9 derived from scale 6A, F, and G (HEOEED, 1978, pp. 17, 29). They focus on interaction with children in relation to behavior that is desirable. Item 7 assesses appropriate responses that encourage firm speech and action that are persuading and convincing. Item 8 rates praise and encouragement used by the child care aide in work procedure. Item 9 assesses privacy given to the child in discussing his/her behavior. The discrimination index was .75 for item 7, .37 for item 8, and .50 for item 9.

Items 13, 14, and 15 were drawn from scale 7A, F, and G (HEOEED, 1978, pp. 33, 35) and they assess assistance with equipment and supplies. Item 13 rates adequacy of assembling equipment and supplies. It has a discrimination index of .37. Item 14 focuses on ability to operate and use audio visual equipment. Its discrimination index was low, .12. Item 15 assesses handling and correct use of food preparation equipment. Its discrimination index was not available.

Items 16 and 17 were drawn from scale 8A and E (HEOEED, 1978, p. 37). They assess assistance with arts and crafts. Item 16 focuses on adequacy of art media and their effective use. Item 17 relates to how media should be used. Then a discrimination index was not available for item 16; for item 17 the index was .37.

The interrater reliability was not given for each of the seven scales individually. For all seven together, interrater reliability calculated using Pearson Product Moment Correlation was estimated at .70.
Validity of the original seven scales was assured by having the scales reviewed and approved by professionals in preschool services. The professionals included both university faculty and practitioners. Validity of the 17-item scale developed for this study was assured through review by experts in child development and in evaluation.

Data Collection

Questionnaires were administered to the identified 84 students in April 1986. The questionnaire used to collect data contained three instruments: an achievement test, an attitude inventory, and a performance device. Teachers in the respective schools were asked to return the questionnaires in the postage-paid, self-addressed envelopes to the Department of Home Economics Education, Iowa State University.

Of the 84 questionnaires administered, 84 students responded (100%), all of which were usable for analysis. Responses were recorded on machine-scorable answer sheets.

Follow-up: A letter was sent to the home economics teachers of each of the nine schools that participated in Phase I of the study during fall 1986. Enclosed in each of the letters was a list of the students and their addresses as of spring 1986. Each teacher was asked to notify us of any changes in addresses that had occurred, and to supply any information about the occupational status of their graduates (see Appendix A).

A nine-item occupational inventory questionnaire was sent to each of the 69 students who were traced. Questions 1 to 6 contained "yes" or "no" responses. If students were working, they were asked to indicate the nature of their employment. Items 7 and 8 requested information on the
number of hours of work and hourly wage. Item 9 asked students to indicate reasons why they liked their jobs.

Data Analysis

This section describes how data were analyzed for the instruments administered to the students. Data for each of the four instruments—achievement test, attitude inventory, performance device, and the follow-up questionnaire were analyzed separately.

An item analysis was conducted on the achievement test to determine the item difficulty, item discrimination, and distractor analysis for each of the 40 multiple-choice test items. Test statistics were computed, and included a mean, standard deviation, and reliability using Kuder-Richardson Formula #20.

Mean scores and standard deviations also were calculated for the attitude inventory and performance device. In addition, item means were calculated for the performance device. Reliability of each instrument was determined using the coefficient alpha procedure.

Correlation coefficients were computed to determine the relationships between grade point average (GPA), achievement test, attitude inventory, and performance device.

Frequency counts were used for 8 of the 9 items on the follow-up questionnaire. The last item, an open-ended question, was subjected to content analysis. Students' responses were coded into five categories to determine areas of interest about their jobs.
CHAPTER IV. FINDINGS AND DISCUSSION

The primary purpose of this study was to examine the achievement, attitude, and performance of students in occupational child care programs in Iowa. Child care programs were housed in both secondary schools and area community colleges.

The findings are reported and discussed in four parts that include the achievement test, attitude inventory, performance device, and the follow-up questionnaire.

Achievement Test

Twenty-five of the 40 items in the achievement test met the three criteria for test items (Henryssen, 1971). They were: (1) difficulty index of 30-70%, (2) discrimination index of .20 or greater, and (3) distractors attractive to at least one subject. Of the 40 items, 15 that did not meet above criteria need to be revised.

The KR-20 reliability of the test was .66. A reliability of this size is judged acceptable for exploratory research.

Item difficulty: The item difficulty index indicates the percentage of students who answer each question correctly. The item difficulty for the test ranged from 13 to 96%; 36 out of the 40 items fell into the range of 30-70% that is recommended by Henryssen (1971). An overall difficulty index of 63% was recorded.

Four of the achievement test items appeared to be either too difficult or very easy. For example, items 20 and 36 seemed too difficult. Out of 82 students who responded to item 20, only 13% answered
it correctly. Of the 82 students who attempted item 36, only 15% got it right. On the other hand, items 22 and 34 seemed too easy. Out of 84 students who answered item 22 on the test, 79% had the correct answer. Similarly, 82 students attempted item 34, and 79% got it right (see Table 1).

**Item discrimination:** The discrimination indices of 31 of the 40 items fell into the acceptable discrimination of at least .20. The discrimination index represents the degree to which students who got the item correct also had high scores on the test. Eight of the items had discrimination indices below .20, and one item had a negative discrimination index (see Table 1). Item 19, which showed a negative discrimination index, indicated that more students who got the item wrong scored higher on the test than students who got the item right (Gronlund, 1981). A negatively discriminating item should either be revised to discriminate positively or be eliminated.

**Distractor analysis:** Of the 40 achievement test items, 33 contained functioning distractors. Seven items had one nonfunctioning distractor, i.e., the option did not attract one student in a group of 84. The seven items with one nonfunctioning distractor need to be revised.

**Achievement test results**

There were a total of 40 multiple-choice items for measuring students' knowledge of child care. The mean score was 25, or 63%, with a standard deviation of 4.52. Because the test was a norm-referenced test, student performance was judged acceptable.
Table 1. Item analysis statistics for achievement test

<table>
<thead>
<tr>
<th>Item</th>
<th>Distractor analysis</th>
<th>Number attempt</th>
<th>Number right</th>
<th>Difficulty index</th>
<th>Discrimination index</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
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<td>6</td>
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<td>82</td>
</tr>
<tr>
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<td>71&lt;sup&gt;a&lt;/sup&gt;</td>
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</table>

<sup>a</sup>Correct responses.

<sup>b</sup>Items met the three achievement test criteria: (1) difficulty index 30-70%; (2) discrimination indices >20; (3) all distractors functioning.

<sup>c</sup>Negative discrimination index.
<table>
<thead>
<tr>
<th>Item</th>
<th>Distractor analysis</th>
<th>Number attempt</th>
<th>Number right</th>
<th>Difficulty index</th>
<th>Discrimination index</th>
</tr>
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<td>1</td>
<td>82</td>
<td>79</td>
<td>96</td>
</tr>
<tr>
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<td>17</td>
<td>17</td>
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<td>15</td>
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<td>54</td>
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<td>33</td>
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<td></td>
<td></td>
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Table 2. Mean scores and standard deviations on grade point average, achievement test, attitude inventory, and performance device

<table>
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<tr>
<th></th>
<th>n</th>
<th>Mean</th>
<th>Standard deviation</th>
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<tr>
<td>GPA^d</td>
<td>76</td>
<td>2.75</td>
<td>0.85</td>
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<tr>
<td>Achievement test^b</td>
<td>84</td>
<td>25.05</td>
<td>4.52</td>
</tr>
<tr>
<td>Attitude inventory^c</td>
<td>84</td>
<td>29.67</td>
<td>2.91</td>
</tr>
<tr>
<td>Performance device^d</td>
<td>84</td>
<td>56.76</td>
<td>12.98</td>
</tr>
</tbody>
</table>

^aGoes from 1 to 4 with an A=4.00, B=3.00, and C=1.0.
^bScores range from 0-40.
^cScores range from 12 to 36.
^dScores range from 17 to 85.

The highest score was 34 out of 40, or 85%, while the lowest score was 10 out of 40, or 25%. Out of 84 students who took the achievement test, 38 scored below the mean, while 46 students scored above the mean (see Appendix D).

The achievement test subscores, by percentage correct in content areas, ranged from 50 to 70 percent. The content area emphasized in the achievement test comprised the following areas: (1) leadership, (2) health and safety, (3) interaction, (4) equipment and supplies, and (5) arts and crafts. The highest score was recorded for health and safety (70 percent), while the lowest (50 percent) was recorded for the arts and crafts content area (see Table 3).
Table 3. Percentages of achievement test in content areas

<table>
<thead>
<tr>
<th>Content area</th>
<th>Number of items</th>
<th>Percentage correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership</td>
<td>8</td>
<td>64</td>
</tr>
<tr>
<td>Health and safety</td>
<td>8</td>
<td>70</td>
</tr>
<tr>
<td>Interaction</td>
<td>9</td>
<td>67</td>
</tr>
<tr>
<td>Equipment and supplies</td>
<td>8</td>
<td>66</td>
</tr>
<tr>
<td>Arts and crafts</td>
<td>7</td>
<td>50</td>
</tr>
</tbody>
</table>

The achievement scores by content areas showed that the students mastered the contents in four areas, but were less proficient in arts and crafts. Students were more comfortable with content in the other four areas.

Attitude Inventory

Out of 36 possible points on the attitude inventory, the mean score was 29.67 and the standard deviation was 2.91. These scores indicated that students generally tended to have positive attitudes toward children.

The alpha reliability estimate was .54. The low reliability is accepted as a guide for information gathering on child care training programs in Iowa. Gronlund (1981) suggested that a lower reliability is acceptable during the early stage of research as a guide for gathering information.
There were similarities on item mean scores of the attitude inventory shown in Table 4. For example, out of the 12 items, eight had mean scores that ranged from 2.60 to 2.90. This might be an indication that students had similar feelings about children on those items. Item 8 was the only item with a mean score below 2.00. The situation described in item 8 was one that measured students' feelings towards discipline of children. Although the students had positive attitudes about children's discipline in general, their choice of the right disciplinary action for young children seemed to be a difficult task.

Items 2 and 11 had highest mean score of 2.90 each. Students tended to have positive attitudes toward children in these two items. In item 2, students were to express their feelings toward children when families, relatives, or friends visited their homes, while feelings relating to a child discovering directions were to be expressed in item 8.

Table 4. Means and standard deviations of attitude inventory items (n=84)

<table>
<thead>
<tr>
<th>Item</th>
<th>Mean^a</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<td>.72</td>
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<tr>
<td>2</td>
<td>2.88</td>
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<td>2.46</td>
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<td>2.14</td>
<td>.76</td>
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<tr>
<td>11</td>
<td>2.86</td>
<td>.41</td>
</tr>
<tr>
<td>12</td>
<td>2.61</td>
<td>.62</td>
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</tbody>
</table>

^a Mean scores range from 1 to 3.
Performance Device

The performance device had a possible range of scores from 17 to 85; the overall mean performance rating was 56.76. The standard deviation was 12.96. This mean score suggests that students could perform the tasks expected of child care assistants. In general, teachers' performance ratings of students were between good and excellent (3 "good" and 5 "excellent").

The alpha reliability estimate for the performance device was .94. The high reliability indicates that students were judged consistently by teachers.

Teachers' mean ratings of the students' performance on individual items ranged from 2.68 to 3.86, with standard deviations of .86 to 1.30. Of the 17 items, 16 had mean scores greater than 3.00 (see Table 5). This showed that teachers judged that students could perform the tasks well. The teachers judged that students were not able to handle audio-visual equipment very well (mean rating = 2.68).

The performance device had six content areas of emphasis, which included: (1) leadership, (2) health and safety, (3) interaction, (4) equipment and supplies, (5) arts and crafts, and (6) routine. The overall ratings from the six content areas ranged from 3.33 to 3.68, which was good on the 1-5 scale used (see Table 6).

Health and safety content area had the highest mean (3.68), while the smallest mean was recorded on equipment and supplies content area (3.33). This lower mean on equipment and supplies might be a result of low mean score on handling of audio-visual equipment.
Table 5. Means and standard deviations of performance inventory items

<table>
<thead>
<tr>
<th>Item and content area</th>
<th>n</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
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<tr>
<td>1. Leadership</td>
<td>81</td>
<td>3.48</td>
<td>1.00</td>
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<td>79</td>
<td>3.56</td>
<td>0.87</td>
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<td>4. Health and safety</td>
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<td>84</td>
<td>3.73</td>
<td>1.00</td>
</tr>
<tr>
<td>10. Equipment and supplies</td>
<td>84</td>
<td>3.71</td>
<td>0.90</td>
</tr>
<tr>
<td>11. Equipment and supplies</td>
<td>77</td>
<td>3.59</td>
<td>0.94</td>
</tr>
<tr>
<td>12. Equipment and supplies</td>
<td>84</td>
<td>3.33</td>
<td>1.04</td>
</tr>
<tr>
<td>13. Arts and crafts</td>
<td>84</td>
<td>3.64</td>
<td>1.04</td>
</tr>
<tr>
<td>14. Arts and crafts</td>
<td>57</td>
<td>2.68</td>
<td>1.30</td>
</tr>
<tr>
<td>15. Day care routines</td>
<td>62</td>
<td>3.68</td>
<td>1.13</td>
</tr>
<tr>
<td>16. Day care routines</td>
<td>83</td>
<td>3.63</td>
<td>0.85</td>
</tr>
<tr>
<td>17. Day care routines</td>
<td>84</td>
<td>3.52</td>
<td>1.04</td>
</tr>
</tbody>
</table>

Table 6. Mean scores of teachers’ ratings of students’ performance in content areas (n=84)

<table>
<thead>
<tr>
<th>Content area</th>
<th>Number of items</th>
<th>Mean(^a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership</td>
<td>3</td>
<td>3.51</td>
</tr>
<tr>
<td>Health and safety</td>
<td>3</td>
<td>3.68</td>
</tr>
<tr>
<td>Interaction</td>
<td>3</td>
<td>3.54</td>
</tr>
<tr>
<td>Equipment and supplies</td>
<td>3</td>
<td>3.33</td>
</tr>
<tr>
<td>Arts and crafts</td>
<td>2</td>
<td>3.58</td>
</tr>
<tr>
<td>Routine</td>
<td>3</td>
<td>3.54</td>
</tr>
</tbody>
</table>

\(^a\)Mean scores range from 1 to 5.
Relationships between Achievement, Attitude, and Performance

Intercorrelations between the grade point average, achievement test, attitude inventory, and performance device are shown in Table 7.

Significant but weak relationships were found between grade point average and achievement (r=.21, p<.10) and performance (r=.38, p<.001). There also were significant but weak relationships between achievement and attitude (r=.27, p<.05) and achievement and performance (r=.20, p<.10).

Students with high grade point averages tended to have high achievement scores and high levels of performance. Also, students with high achievement test scores were somewhat more likely to have positive attitudes and be judged competent in the tasks performed by child care aides.

There was no relationship between attitude and performance (r=15). This suggested that students' performance did not depend on their attitude toward child care.

Table 7. Intercorrelation of grade point average, achievement test, attitude inventory, and performance device

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPA</td>
<td>--</td>
<td>.21*</td>
<td>-.07</td>
<td>.38***</td>
</tr>
<tr>
<td>Achievement test</td>
<td>--</td>
<td>.27**</td>
<td>.20*</td>
<td></td>
</tr>
<tr>
<td>Attitude inventory</td>
<td>--</td>
<td></td>
<td>.15</td>
<td></td>
</tr>
<tr>
<td>Performance device</td>
<td>--</td>
<td></td>
<td></td>
<td>--</td>
</tr>
</tbody>
</table>

* p<.10.
** p<.05.
*** p<.001.
Follow-up

Out of the 69 questionnaires, all of the 47 who responded to the follow-up questionnaire showed that they were basically happy. Of the 47 respondents, 35 (74%) were employed. Of the 35 employed graduates who responded, 18 (51%) were in child care, or 38% of all respondents. This finding is comparable with Almy's (1981) study in which she found that 31% of the students who completed the Illinois child care program at high schools and vocational schools were employed in child care.

Graduates in this study were found working in various child care services both in and outside Iowa. Graduates had jobs such as babysitting, nanny, teaching in day care/preschool, assistant teacher, and day care substitute. One of the graduates indicated that she was self-employed as a preschool teacher.

Seventeen (49%) of the employed graduates had various jobs. Their jobs included working in food stores, jewelry stores, fashion shops, or nursing homes for the elderly.

Out of the 47 graduates who responded, 17 (36%) were in school; several of these also had part-time jobs. Of the 13 (28%) graduates who indicated that they were homemakers, five (11%) of them were employed. This is an indication that a few of the graduates had dual role responsibilities. Only four graduates indicated that they had more than one job.

Generally, the number of hours the graduates worked per week ranged from less than 10 hours to more than 40 hours. Out of the 35 employed graduates, 20 (57%) worked between 20 to 40 hours, while 11 (31%) worked
Table 8. Status of students six months after graduation (n=47)

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No.</th>
<th>%</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Are you basically happy?</td>
<td>100</td>
<td>47</td>
<td>64</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>2. Are you in school?</td>
<td>36</td>
<td>(17)</td>
<td>64</td>
<td>(30)</td>
<td></td>
</tr>
<tr>
<td>3. Are you a homemaker?</td>
<td>28</td>
<td>(13)</td>
<td>68</td>
<td>(32)</td>
<td></td>
</tr>
<tr>
<td>4. Are you employed?</td>
<td>74</td>
<td>(35)</td>
<td>26</td>
<td>(12)</td>
<td></td>
</tr>
<tr>
<td>5. Do you have more than one job?</td>
<td>9</td>
<td>(4)</td>
<td>66</td>
<td>(31)</td>
<td></td>
</tr>
<tr>
<td>6. Do you work in child care?</td>
<td>38</td>
<td>(18)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. How many hours do you usually work for pay per week?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-10 hrs</td>
<td>8</td>
<td>(8)</td>
<td>3</td>
<td>(3)</td>
<td></td>
</tr>
<tr>
<td>11-20 hrs</td>
<td>3</td>
<td>(3)</td>
<td>20</td>
<td>(20)</td>
<td></td>
</tr>
<tr>
<td>20-40 hrs</td>
<td></td>
<td></td>
<td>66</td>
<td>(31)</td>
<td></td>
</tr>
<tr>
<td>&gt;40 hrs</td>
<td></td>
<td></td>
<td>9</td>
<td>(4)</td>
<td></td>
</tr>
<tr>
<td>8. What is your hourly wage?</td>
<td>$1-2</td>
<td>(2)</td>
<td>$2-3</td>
<td>(3)</td>
<td></td>
</tr>
<tr>
<td>$3-4</td>
<td>(15)</td>
<td></td>
<td>6</td>
<td>(6)</td>
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</tr>
<tr>
<td>$4-5</td>
<td>(6)</td>
<td></td>
<td>1</td>
<td>(1)</td>
<td></td>
</tr>
<tr>
<td>$5-6</td>
<td>(1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

between 1-20 hours. Only four (9%) graduates specified that they worked more than 40 hours per week.

Wages of the graduates ranged from $1.00 to $5.75 per hour. Of the 26 graduates who reported wages earned, 15 (58%) had wages between $3.00 to $4.00, while 6 (23%) earned between $4.00 and $5.00 per hour. Only one graduate received the highest pay of $5.75 per hour. Most of the graduates, therefore, earned at least the minimum wage of $3.35 per hour. The self-employed graduate indicated a wage of $1.00 per hour; one is uncertain as to whether or not this is the amount being paid per child or the total earned per hour.
Graduates who worked in child care and those who had other jobs seemed to like their jobs. The responses on what the graduates liked about their jobs were categorized for those who were working in child care and for those who had other jobs. Responses of graduates in child care indicated that they: (1) enjoyed working with children, (2) liked their working environment, (3) had good working relationships, and (4) perceived their work as a good learning experience.

Graduates expressed their joy in working with children in several areas such as caring for children, playing with children, planning activities for children, and watching early growth and learning in children. These areas seemed appropriate for child care workers who were competent in their jobs.

The environment in which the graduates worked seemed to be very important to them. For example, they expressed that they liked the hours, flexible schedules, locations of work place, relaxed atmosphere, being part of a large family, being their own boss, and managing their own time. This suggests that graduates enjoyed freedom in making their own decisions.

On working relationships, the graduates seemed to value the people with whom they worked. They revealed that they enjoyed working with a variety of people, and having a wonderful boss. They also expressed willingness to be involved in other responsibilities.

In expressing how child care contributed to their learning experiences, the graduates mentioned that they were exposed to new ideas and classroom experiences. Further, they acquired the ability to apply
what they learned during their child care training to their working situations.

Responses of the graduates who had other jobs were summarized as follows: (1) relationships on the job, (2) working environment, (3) job satisfaction, and (4) self-esteem. Aspects of relationships on the job included meeting new people, working with families that had elderly family members, being around people, and talking to people. This suggests that the graduates valued personal interactions and relationships with people in their places of work.

Characteristics of the working environment that seemed important to the graduates who were not in child care were similar to those identified by the graduates who worked in child care. For example, graduates who were not in child care also valued personal space, such as working at their own desk, flexible working hours, and being their own boss.

Responses of the graduates on job satisfaction showed that they enjoyed what they were doing. They expressed that they found their jobs very rewarding, and that their jobs gave them an incentive to strive for higher goals, such as education. Graduates said their jobs contributed to self-esteem and expressed it by indicating self-satisfaction in doing a good job, feeling important, and being needed.

Summary

Results of this study showed that students acquired the knowledge necessary to be child care assistants, had positive attitudes toward children, and could perform the tasks expected of child care assistants. Further, a follow-up of graduates showed that 38% were employed in child
care as babysitters, nannies, assistants, and day care/preschool teachers. This study suggested that the child care occupational program is not only useful to students in obtaining gainful employment, but also in helping them to acquire knowledge and skills useful in child-raising.
CHAPTER V. SUMMARY AND RECOMMENDATIONS

Summary

The purposes of this study were (1) to examine the achievement, attitudes, and performance of students in occupational child care training programs in both secondary schools and area community colleges in Iowa, (2) to evaluate the effectiveness of child care training programs in occupational home economics in Iowa by assessing occupational status of graduates six months after graduation, and (3) to make recommendations for occupational child care training programs in Iowa.

The sample included the 84 students in nine schools in Iowa who had occupational child care programs during spring 1986. Five programs were in secondary schools and four in post-secondary schools (community colleges).

The data collection devices consisted of an achievement test, attitude inventory, performance device, and the occupational follow-up questionnaire. The achievement test contained 40 objective items with emphasis on the following content areas: (1) leadership, (2) health and safety, (3) interaction, (4) equipment and supplies, and (5) arts and crafts.

The attitude inventory contained 12 items and focused on attitude toward being with children. The performance device consisted of 17 items which assessed the students' performance in child care. Six content areas were emphasized in the performance device. They were: (1) leadership, (2) health and safety, (3) interaction, (4) equipment and supplies, (5) arts and crafts, and (6) routine.
Data were collected during the spring semester of 1986 for the achievement test, attitude inventory, and performance device. Usable data were obtained from 84 students. Sixty-nine out of the 84 students who participated in Phase I of the study were traced for the follow-up study. Out of the 69 questionnaires mailed to the graduates, 47 (68%) responded.

Item analysis and reliability were calculated for the achievement test. Means and standard deviations, percentages, and frequency counts were the statistical procedures used for the attitude inventory and performance device. Correlation coefficients were computed to determine the relationships between grade point average, achievement test, attitude inventory, and performance device.

Frequency counts were determined of items 1 to 6 in the follow-up study. In addition, the average hours worked and hourly wage were determined.

The reliability estimate for the achievement test using Kuder-Richardson #20 was .66. The reliability estimate for the attitude inventory using coefficient alpha was .54. Both were considered acceptable for the exploratory nature of the study. The coefficient alpha reliability estimate for the performance device was .94, which showed consistency in teachers' ratings of students.

The achievement test has a mean score of 25, or 63%, with a standard deviation of 4.52. Performance of the students on the achievement test was judged acceptable. The mean score on attitude inventory was 29.67 with a standard deviation of 2.91. Students tended to have positive attitudes toward children. The performance device had a mean score of
56.76, indicating that students performed tasks related to child care well.

Correlation coefficients showed significant but weak relationships between grade point average, the achievement test, and the performance device. Also, there were significant but weak relationships between achievement, attitude, and performance. Students with high grade point averages tended to have high achievement scores and high levels of performance. Also, students with high achievement scores were somewhat more likely to have positive attitudes and to be judged competent in performing tasks of child care aides.

Data from the 47 students who responded to Phase II of the study showed that 35 (74%) were employed. Of the 35 employed respondents, 18 were in child care, or 51% of those employed. Graduates who worked in child care had jobs that included babysitting, nanny, day care/preschool teaching, and child care assistant. Other jobs in which students were employed included food stores, jewelry stores, fashion shops, and nursing homes. More than half of the graduates who were employed worked between 20 to 40 hours per week and earned at least the minimum wage of $3.35 per hour.

Graduates expressed what they liked about their jobs. Graduates who worked in the child care mentioned that they loved and enjoyed working with children, liked their working environments including location and flexible schedule. They showed that they were satisfied with the variety of people with whom they worked, and considered their bosses "wonderful."
They said that their prior exposure to child care training contributed to their knowledge of child care.

There were similarities in the responses between graduates who worked in child care and those who were in various jobs. For example, graduates in other jobs enjoyed meeting people, talking to people, and being around people. They also enjoyed flexible working hours, working at their own desks, and being their own bosses. Graduates also expressed that they found their jobs rewarding and were satisfied with what they were doing. Apart from contributing to their self-esteem, they mentioned that their jobs gave them an incentive to strive for higher educational goals.

Recommendations

Although the occupational child care program seemed successful, two recommendations are made:

1. Greater attention should be given to the arts and crafts and equipment areas.

2. The employment rate might be improved if a cooperative program were incorporated.

Based on experiences in this study, the following studies are recommended for further research:

1. Compare the performance of graduates on the job via direct observation, ratings by child care directors, or self-ratings.

2. Survey child care directors to determine minimum competencies needed by child care assistants, especially in the areas of food preparation or media presentations.
3. Replicate the present study in Iowa over time or in other states to monitor performance of students; include a second achievement test that covers knowledge of child growth and development.

4. Use the present research as a model for the design of other studies that seek to evaluate occupational home economics programs such as food service or commercial sewing.
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ACKNOWLEDGMENTS

For the assistance, support, and contributions of many persons, I express my appreciation. I especially wish to express my gratitude to:

Dr. Ruth P. Hughes, my major professor and advisor, for her patience, encouragement, and professional and scholarly guidance throughout my efforts in the development of this study;

Drs. Anton Netusil, Samuel Clark, Margaret Torrie, and Motoko Lee for their cooperation, encouragement, and willingness to serve as members of my program of study committee;

Dr. Alyce Fanslow, who filled in immediately after my major professor retired, for her professional guidance in assisting with parts of the study;

Dr. Helen Njus, for helping in the selection and dissemination of the instruments used in this study;

The Federal Government of Nigeria and the Kwara State Ministry of Education for giving me the opportunity to pursue this academic challenge;

Gary Bracket for typing part of this dissertation, and to Bonnie Trede for the hours devoted in typing the whole dissertation;

In a very special way, I want to thank my husband, Dr. Samuel Adeyemi Iyewarun, for his endurance and for encouraging me so much to accept the challenge;

My four children, Abayomi, Iyabo, Bosede, and Remi, for their patience. I am particularly indebted to Remi, my youngest child who stayed with me, for her understanding and undemanding attitudes during my years of struggle;
All my relatives, friends in Nigeria and in the United States of America for their moral support, encouragement, and love during my years of study at Iowa State University;

I give thanks to God for the strength, health, and wisdom He bestowed upon me to persevere to the end. Praise His Name.
APPENDIX A.

CORRESPONDENCE
April 10, 1986

Dear Teacher:

Thank you for your willingness to participate in a study of occupational child care education. Phase one of the study will be completed this spring.

We are collecting the four kinds of information listed below.

1. Child Care Aide Course Content
   The teacher is to complete one form for the course.

2. Child Care Aide Observation Scale
   The teacher is to complete a form for each student who will be graduating this spring.

3. Child Care Aide Attitude Scale
   Please set aside 20 minutes of a class period and have each graduating student complete the scale.

4. Child Care Achievement Test
   Please administer this test during class time to all graduating seniors. Allow 50 minutes for students to complete the test.

All of the copies needed for your class are enclosed.

Please complete the data collection by May 15, 1986 and return all data to us. Use the enclosed postage-paid envelope to return the data. Please be sure the envelope is in the mail by Friday, May 16, 1986.

Summary data for your class will be sent to you early in June 1986. Individual students scores will not be available to protect the confidentiality of student responses.

If you have any questions, please phone Ruth Hughes at 515-294-6444.

Sincerely,

Ruth F. Hughes
Head
Home Economics Education
Iowa State University

Gladys Grabe
Consultant
Home Economics Education
Department of Public Instruction
November 28, 1986

Dear [Name]:

Thank you for participating last spring in a study of child care programs. You are one of 84 students in Iowa who was able to complete the achievement test and was observed to have good skills for helping to care for children.

Please take a few minutes to answer the questions on the enclosed questionnaire. Your answers will provide information on which administrators can base decisions about child care programs. Please mail your responses right away in the postage-paid envelope. You are very important to this study.

Sincerely,

Gladys Grabe/Consultant
Home Economics Education
Department of Education
Iowa State University

Ruth P. Hughes, Head
Home Economics Education
Iowa State University

Enclosure
February 4, 1987

Dear __________________:

Thank you for participating last spring in a study of child care programs. You are one of 84 students in Iowa who was able to complete the achievement test and was observed to have good skills for helping to care for children.

Please take a few minutes to answer the questions on the enclosed questionnaire. Your answers will provide information on which administrators can base decisions about child care programs. Please mail your responses right away in the postage-paid envelope. You are very important to this study.

Sincerely,

Gladys Grabe/Consultant
Home Economics Education
Department of Education
Iowa State University

Ruth P. Hughes, Head
Home Economics Education
Iowa State University

Enclosure
APPENDIX B.

TEST INSTRUMENTS
Name ___________________________ Date of graduation ___________________________ month/year

Overall grade point (check one)
____ A- to A, _____ B- to B+, _____ C- to C+, _____ D- to D+

Name, address and phone number of someone who should know how to reach you in 3 to 6 months.

__________________________ (name) _______________ (phone)
__________________________ (street) ____________________ (city) (state) (zip)

DIRECTIONS: Circle the best answer to each question.

Question 1:
Most important in disciplining youngsters is
A) consistency  B) leniency  C) strictness  D) flexibility

Question 2:
A child's punishment by a parent is adequate if it
A) contributes to adjustment  B) provides for parent's emotions  C) establishes parental authority  D) prevents recurrence of the act

Question 3:
An attitude of consideration for others can be developed most effectively in a child by parents who
A) set an example of consideration  B) explain the value of consideration  C) are consistent with punishment  D) point out inconsiderate acts

Question 4:
In preparing for their roles as parents the most basic quality individuals can work to develop is
A) a lenient attitude  B) an authoritarian attitude  C) a set of practical rules  D) an attitude of acceptance

Question 5:
Better understanding of children is obtained when it is realized that
A) age is the best guide of capability  B) habit training makes good children  C) children grow in different ways  D) mental age is what a child can do

Question 6:
"Responsibility is not taught, but caught." This saying means that children develop responsibility from
A) being assigned home duties  B) identifying with responsible adults  C) being told about responsibility  D) consistent and strict discipline
Question 7:
When three-year-old Jimmy's mother calls him to come in, he is usually too busy playing to mind her. The best thing for his mother to do is to
A) after a warning, go and get him
B) after calling, do nothing else
C) tell him how it makes her feel
D) make him stay inside for punishment

Question 8:
Dennis is six years old. His teacher observes him taking a pencil box from a classmate's desk and notifies his parents. The parents should probably
A) take a privilege away for a week
B) talk with Dennis about the box
C) suggest that he mistook it for his
D) insist he apologize to the class

Question 9:
Which of the following would have the most potential for encouraging dramatic play in children?
A) puzzles and pegboards
B) tricycles and wagons
C) dolls and housekeeping toys
D) balls and beanbags

Question 10:
One of the main purposes of art, music, and games is to provide
A) an acceptable release for tension
B) experience with competition
C) success and non-threatening defeat
D) opportunity to learn rules

Question 11:
Which of the following would make a toy UNSAFE for a small child?
A) it makes noises
B) it is painted with lead-free paint
C) it has no detachable parts
D) it is made of soft wood

Question 12:
Which of the following is the BEST example of a versatile toy?
A) puzzle
B) blocks
C) record player
D) truck

Question 13:
An active three-year-old boy who begins to show little interest in his toys most likely
A) needs more directed play
B) is confused by too wide a choice
C) has toys not suited to his age
D) is developing slowly

Question 14:
Which is likely to be the LEAST effective approach in providing for the safety of small children?
A) watching children very closely
B) putting a fence around the yard
C) telling them what is dangerous
D) keeping danger out of reach
Question 15:
Some educators believe that children should not be given coloring books. Which of the following would most likely be their reason? The books
A) are too exciting for young children
B) inhibit freedom of expression
C) are generally of poor quality
D) create a climate of frustration

Question 16:
A five-year-old says he is going to draw a house. The discrepancy between what he intends to do and what he does is evidence of a young child's lack of
A) predetermined logic and purpose
B) skill in perspective and proportion
C) normal thinking patterns
D) development of a sense of humor

Question 17:
Toys such as nests of cubes, puzzles and tricycles promote the child's perceptual development in which area?
A) space
B) weight
C) number
D) time

Question 18:
Some three-year-old children are playing together in the sandbox at nursery school. Jane, a shy, quiet child, stands for some time watching them. The teacher could say to Jane
A) "Do you want to play in the sand?"
B) "Here is a spoon and a truck."
C) "Do you need to be asked to play?"
D) "Go play with the other children."

Question 19:
Three children are walking up a steeply inclined board and climbing onto the jungle gym. Three other children are playing in the sandbox nearby. Where should the teacher-supervisor stand?
A) close to the children on the board
B) close to the sandbox
C) close to the jungle gym
D) halfway between the two groups

Question 20:
Whenever six-year-old Bobby draws pictures of people, he draws eyes in the back of their heads as well as in the front. Which approach would be best?
A) say nothing to Bobby about the eyes
B) tell Bobby where to place the eyes
C) ask Bobby why he draws four eyes
D) look with disapproval at his work

Question 21:
Which play activity is most likely to appeal to the average two-year-old?
A) making mud pies
B) cutting out paper shapes
C) jumping rope
D) playing school

Question 22:
Frank is busily piling sand from the sandbox to the ground around the sandbox. Which response will best help him understand the rules at the nursery school?
A) "Stop putting sand on the ground."
B) "You can't play with sand anymore."
C) "Sand belongs in the sandbox."
D) "I'm sorry, but you have to stop."
Question 23:
Which approach is MOST likely to develop a child's independence?
A) "I had to learn how the hard way."
B) "Get your shoes on, I'll help tie."
C) "Try to finish faster next time."
D) "You can't care for a dog yet."

Babies learn to sit, crawl, and walk at certain ages. Which of the following is the reason for a baby's ability to do these activities at the usual age?
A) opportunities to try things
B) encouragement from the parents
C) well-developed muscles and nerves
D) seeing older children do things

Question 25:
When children have a strong dislike for a particular food, the best way to handle the situation is to
A) force them to eat a small portion
B) mix the food with a favorite food
C) respect the food dislike
D) reward them if they eat the food

While playing Jimmy cut his knee. The wound is bleeding severely. What is the first step in treating this injury?
A) let it bleed to wash out the dirt
B) apply pressure to the wound
C) wash with green soap and bandage
D) call a doctor

Question 27:
Which of the following conditions is LEAST likely to require immediate medical attention?
A) an animal bite
B) a puncture from stepping on a nail
C) swallowing liquid household bleach
D) a nosebleed

If a preschool child has a red throat the parents should keep the child
A) away from other children
B) involved with quiet play
C) involved in normal play
D) from contacting children indoors

Question 29:
The first responsibility of a person caring for children in an open play yard is to
A) keep conflicts to a minimum
B) organize and direct games
C) be alert to potential dangers
D) notice normal physical development

Which of the following is NOT a necessary condition for a nursery school
A) lock or gate protection for stairs
B) open areas that allow supervision
C) ventilation and temperature control
D) child-sized toilets and lavatories
Question 31:
When Eric was fixing snacks for the nursery school, he noticed the dip for the vegetable contained something he dislikes. What is the wisest thing for Eric to do?

A) avoid eating with the children
B) fix a different dip for himself
C) serve the dip and eat a little
D) don't serve the dip

Question 32:
The most desirable environment for children is provided by

A) sturdy equipment for physical use
B) playmates of similar economic level
C) parents who put the children first
D) a helpful, understanding atmosphere

Question 33:
Which feature on children’s clothing is most helpful in encouraging them to dress themselves?

A) snap fasteners
B) zippers
C) hooks and eyes
D) buttons

Question 34:
Old hats, shoes, coats, and wigs encourage which one of the following types of play?

A) active
B) dramatic
C) parallel
D) quiet

Question 35:
Children's phonograph records are best stored

A) vertically in a box or cabinet
B) one on top of another on shelves
C) protected in paper jackets
D) low so the children can reach them

Question 36:
Play dough that is mixed to just the right consistency for modeling is

A) moist enough to leave a light film
B) slightly sticky
C) dry enough to easily get off hands
D) dry enough for modeling pressure

Question 37:
The consistency of tempera paints should be

A) creamy thick
B) thin and watery
C) smooth and dry
D) almost stiff

Question 38:
Which of the following does NOT tend to have much influence on IQ test scores?

A) physical condition of the child
B) environmental experiences
C) verbal ability
D) sex of child
Question 39:
Teaching a child habits of unquestioning behavior in all areas tends to make the child a

A) better citizen  
B) person of character  
C) person dependent on others  
D) leader of group activities

Question 40:
Which of the following is LEAST likely to be included in typical nursery school schedules?

A) free play  
B) organized group games  
C) snacks  
D) quiet time
Let's face it: Infants aren't always smiling and toddlers aren't always adorable. Even parents can have mixed feelings about their children. What are your feelings about children?

DIRECTIONS: Read the numbered statements that describe different situations and place the letter of the response that best indicates your feelings in the blank to the left. There are no right or wrong answers. These are just expressions of your feelings. It is important that you answer every question.

1. Usually I am glad to babysit because
   a. I like to earn the money
   b. I enjoy being with the children
   c. It gets me away from home

2. When families or relatives or friends visit our home
   a. I'm thankful when they have no small children or babies to fuss during the visit.
   b. I'm rather glad to see the little ones and like to spend some time with them.
   c. I don't have anything to do with the small children of guests in our home.
   d. We have no friends or relatives who bring their small children when they visit in our home.

3. If I were asked to be a sponsor or help out in some way with a pre-teen group of girls and boys and I could spare the time for it
   a. I would agree to do it and look forward to the activities.
   b. I would agree to do it only if I couldn't possibly get out of it.
   c. I would say no.

4. If I had a chance at a summer vacation job that included directing play for young children at a playground
   a. I would take it only if I couldn't get anything else.
   b. I'd rather have this type of job than almost any other.
   c. I think I would enjoy this work with children.
   d. I'd take it for the money I'd earn, but I wouldn't especially look forward to doing the job.

5. When our neighborhood lawns seem "crawling with kids" or when the air is "noisy with a crying baby," I am more apt to
   a. Be irritated or annoyed unless it doesn't last very long.
   b. Figure "such is life" and "I was one myself once."
   c. I never notice the kids or the noise.
6. If a fussing, crying baby keeps me from hearing some of the dialogue at the movies
   a. I don't mind; I figure the baby can't help it.
   b. I resent the parents' having taken the baby to the movies.
   c. I have never noticed babies crying at the theaters.

7. If my kid brother, or sister, or the children playing around the neighborhood asked me to join in a game of catch, rope-jumping or some other such juvenile activity
   a. I'd just as soon play awhile; I'd really enjoy it.
   b. I'd play awhile but get out of it as soon as I could.
   c. I don't like to do this so I wouldn't commit myself to joining in.
   d. I don't get asked.

8. When a small child seems to deliberately disobey a direction from you (or you observe this happening with someone else), what is your first impulsive feeling?
   a. A feeling of wanting the child to be punished for disobedience.
   b. A feeling of annoyance or irritation with the child.
   c. A resigned feeling of "what can you expect of small children."
   d. A feeling of sympathy for the child.
   e. Can't say. I've never been in or observed this kind of a situation.

9. When a toddler (who may be your little brother or a visiting neighbor child, etc.) breaks or spoils something that belongs to you, are you able to keep from being angry with the child and from showing your anger about the destruction?
   a. Yes
   b. No
   c. This has never happened to me.

10. If a women carrying a fussy baby got on your bus, would you encourage her to take the seat next to you?
    a. Yes
    b. No
    c. This has never happened to me, and I can't imagine myself in the situation.

11. If I were asked to take a baby-sitting job I would prefer
    a. The job to be only a matter of watching over sleeping babies or children for a few hours.
    b. The job to involve some contact with the baby or children (such as feeding, putting to bed, etc.).
    c. A job in which I could assume complete charge of the baby or children over a period of several days.

12. I feel preschoolers are best off socially if
    a. A parent can stay home with them
    b. They have a pre-school experience
    c. There are older children in the house
**CHILD CARE AIDE OBSERVATION SCALE**

**Student/Employee ____________________________**

**Rated by ____________________________ Date ____________________________**

**DIRECTIONS:** Use the 1-5 scale below to indicate your rating of the performance of the child care aide student/employee.

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<th>RATING</th>
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<td>Not Acceptable</td>
<td>Good</td>
<td>Excellent</td>
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<tr>
<td>Activities inappropriate for child's interest level, ability, and stage of development.</td>
<td>Usually chooses activities appropriate for the child's interest level, ability, and stage of development.</td>
<td>Selects activities appropriate for child's interest level, ability, and stage of development.</td>
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<td>Rarely contributes suitable suggestions for children's activities.</td>
<td>Suggestions for children's activities are suitable but routine.</td>
<td>Makes creative suggestions for suitable activities.</td>
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<td>No evidence of knowledge of subject, techniques.</td>
<td>Work indicates limited knowledge of subject and techniques.</td>
<td>Work indicates familiarity of subject and techniques.</td>
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<td>Does not recognize and/or report changes in child's behavior.</td>
<td>Can recall changes in a child's behavior if questioned by the teacher.</td>
<td>Is aware of signs; alerts teacher immediately.</td>
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<td>Ignores established limits.</td>
<td>Attempts to maintain established limits but is not consistent.</td>
<td>Knows and consistently maintains established limits.</td>
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<td>Disregards established health standards.</td>
<td>Attempts to maintain health standards; infractions are occasionally unnoticed or uncorrected.</td>
<td>Maintains established health standards; corrective suggestions are made and followed.</td>
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<td>Speech and actions lack decisiveness; sureness.</td>
<td>Speech and actions are usually persuading, convincing.</td>
<td>Speaks and acts with firmness and authority; persuades and convinces.</td>
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<td>Makes no attempt to encourage; OR criticizes and ridicules.</td>
<td>Attempts a few words or encouraging g's usually for the outstanding or exceptional.</td>
<td>Praise and encouragement are given honestly and freely to all.</td>
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<td>Discusses child's behavior in front of him/her.</td>
<td>Usually refrains from discussing child's behavior in front of him/her.</td>
<td>Discusses child's behavior out of range of children.</td>
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<td>Does not restrict talking or voice volume.</td>
<td>Usually limits talking; uses normal voice when necessary.</td>
<td>Talks with children; usually uses quiet voice.</td>
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<td>Lets personal food likes and dislikes show.</td>
<td>Eats most foods; food dislikes are usually inconspicuous.</td>
<td>Eats foods served without derogatory remarks; shows enjoyment in eating.</td>
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<td>Inadequately assembles equipment and supplies.</td>
<td>Assembles most supplies and equipment; omissions obtained as necessary.</td>
<td>Assembles all equipment and supplies necessary.</td>
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<td>Is careless when operating audio-visual equipment.</td>
<td>Is usually careful and accurate when operating audio-visual equipment.</td>
<td>Adeptly and skillfully operates audio-visual equipment.</td>
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<td>Food preparation equipment is inefficiently and/or incorrectly used.</td>
<td>Food preparation equipment is correctly used; limited skill lengths preparation time.</td>
<td>Food preparation equipment is correctly and efficiently used.</td>
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<td>Art media so poorly prepared that use is difficult; limited.</td>
<td>Art media adequately prepared for general use.</td>
<td>Art media correctly prepared for optimum use.</td>
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<td>Dictates how media should be used.</td>
<td>Sometimes dictates and/or gives so many directions that free expression is limited.</td>
<td>Allows free expression; or subtly suggests how media could be used.</td>
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TOTAL
OCCUPATIONAL INVENTORY
Home Economics Education
Iowa State University

Directions: Please read the following questions and circle your response or fill in the blank.

1. Are you basically happy? Yes No
2. Are you in school? Yes No
3. Are you a homemaker? Yes No
4. Are you employed? Yes No
   (If "yes," continue to question #5. If "no," skip to question #10.)
5. Do you have more than one job? Yes No
6. Do you work in child care? Yes No
   If yes, what is your job title? ______________________________
   What is your employer's name and address?
   _______________________________________________________
   _______________________________________________________

7. How many hours do you usually work for pay during a week?
   1-10 hrs.  11-20 hrs.  20-40 hrs.  more than 40 hours
8. What is your hourly wage? $____.____ not applicable
9. What do you like about your job?
   a. ______________________________________________________
   b. ______________________________________________________
   c. ______________________________________________________
APPENDIX C.

HUMAN SUBJECTS APPROVAL
INFORMATION ON THE USE OF HUMAN SUBJECTS IN RESEARCH

(Please follow the accompanying instructions for completing this form.)

1. Title of project (please type): Evaluation of Occupational Child Care Programs

2. I agree to provide the proper surveillance of this project to insure that the rights and welfare of the human subjects are properly protected. Additions to or changes in procedures affecting the subjects after the project has been approved will be submitted to the committee for review.

Ruth P. Hughes
Typed Name of Principal Investigator
219 MacKay Hall 4-6444
Campus Address
Campus Telephone

3. Signatures of others (if any) Date Relationship to Principal Investigator

Rose Ivyewun 3/17/86 Graduate Student

4. ATTACH an additional page(s) (A) describing your proposed research and (B) the subjects to be used, (C) indicating any risks or discomforts to the subjects, and (D) covering any topics checked below. CHECK all boxes applicable.

☐ Medical clearance necessary before subjects can participate
☐ Samples (blood, tissue, etc.) from subjects
☐ Administration of substances (foods, drugs, etc.) to subjects
☐ Physical exercise or conditioning for subjects
☐ Deception of subjects
☐ Subjects under 14 years of age and/or ☑ Subjects 14-17 years of age
☐ Subjects in institutions
☐ Research must be approved by another institution or agency

5. ATTACH an example of the material to be used to obtain informed consent and CHECK which type will be used.

☐ Signed informed consent will be obtained.
☒ Modified informed consent will be obtained.

6. Anticipated date on which subjects will be first contacted: 4 7 86
Anticipated date for last contact with subjects: 2 28 87

7. If Applicable: Anticipated date on which audio or visual tapes will be erased and/or identifiers will be removed from completed survey Instruments:

8. Signature of Head or Chairperson Date Department or Administrative Unit

9. Decision of the University Committee on the Use of Human Subjects in Research:

☐ Project Approved ☑ Project not approved ☐ No action required

George G. Karas
Name of Committee Chairperson
Date Signature of Committee Chairperson
## Achievement Test Answer Sheet

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| 4 | D | 24 | C |
| 5 | C | 25 | C |
| 6 | B | 26 | B |
| 7 | A | 27 | D |
| 8 | B | 28 | A |
| 9 | C | 29 | C |
| 10 | A | 30 | D |
| 11 | D | 31 | C |
| 12 | B | 32 | D |
| 13 | C | 33 | B |
| 14 | C | 34 | B |
| 15 | B | 35 | D |
| 16 | A | 36 | A |
| 17 | A | 37 | A |
| 18 | A | 38 | D |
| 19 | D | 39 | C |
| 20 | A | 40 | B |
APPENDIX E.

ACHIEVEMENT TEST SCORE DISTRIBUTION
Achievement Test Score Distribution

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APPENDIX F.

ATTITUDE INVENTORY ANSWER SHEET
### Attitude Inventory Answer Sheet

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1 The attitude scale reflects positive, negative, or neutral reactions toward children. Positive reactions were scored 3, neutral 2, and negative 1. Thus, the most positive total score would be 36 and the most negative, 12.