To the Graduate Council:

I am submitting herewith a dissertation written by Lydia Carol Moore Gabbard entitled "A Cost-Effectiveness Comparison of Two Types of Occupational Home Economics Programs in the State of Kentucky." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Education, with a major in Vocational-Technical Education.

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A COST-EFFECTIVENESS COMPARISON OF TWO TYPES OF OCCUPATIONAL HOME ECONOMICS PROGRAMS IN THE STATE OF KENTUCKY

A Dissertation

Presented for the

Doctor of Education

Degree

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ABSTRACT

The purpose of this study was to determine program effectiveness, cost efficiency, and the cost effectiveness ratio of 20 randomly selected reimbursed secondary child care and commercial foods programs in Kentucky and to determine the relationship between these measures and the variables program expenditures, program age, and community size.

This study provides program effectiveness data which measure goal attainments for a program, that is, the extent to which 33 specific target goals were achieved. Also provided were cost efficiency data to determine total program cost which were prorated to the vocational program. Finally a cost effectiveness ratio was determined for each program based on the program effectiveness and cost efficiency measures.

To provide a portion of the program effectiveness data needed, follow-up questionnaires were mailed to both student and employer samples which included all program completers of the nine child care and the 11 commercial foods programs and all employers of students employed in a field related to training. Program cost data for determining cost efficiency measures were obtained from teachers and public information of local school districts' financial reports.

The study provided cost-effectiveness data which should be useful to program planners and curriculum decision makers who must allocate scarce resources among programs.

Conclusions of the study were as follows:

1. Cost efficiency data and program effectiveness indices can be computed for each child care and commercial foods programs and should be useful for both program planners and evaluators.

2. Cost-effectiveness data can be a useful tool for identifying which program type is most efficient and effective.

3. Variations in direct program costs and total program costs can be useful in analyzing programs which are least efficient.

4. The cost-effectiveness analysis measures of this study will be of primary value in making improvements among and between programs.

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CHAPTER I

INTRODUCTION

Since the passage of the Smith-Hughes Act in 1917, federal legislation has had a great impact on vocational home economics. The guidelines, ideas, and the scope of home economists' responsibilities have been expanded.

An obligation and incentive for home economics to establish occupational programs for wage earning were first demonstrated by the enactment of the Vocatioanl Education Act of 1963, and subsequently by the Vocational Education Amendments of 1968, and the Education Amendments of 1976. These latter legislative acts emphasized: (1) programs geared to labor market needs, (2) programs keyed to "gainful" employment and (3) access to high quality training which was realistic in terms of wage earning for the least able or disadvantaged as well as the person with a high level technical ability (Terrass and Comfort, 1979).

The overall purpose of wage-earning occupational home economics was to train individuals for those occupations using home economics knowledge and skills. In Kentucky the emphasis of these gainful programs has been task oriented and the curriculum based on skills required for the specific occupation. Orginally there were two kinds of occupational home economics programs offered in Kentucky

preparing individuals for entry level job skills. These programs were in the area of child care and commercial foods. These programs began as a pilot test with five secondary programs in 1965. Occupational program offerings expanded by 1978-79 to encompass not only the areas of child care and commercial foods, but clothing management, home furnishings and institutional home management and services as well. The number of programs in Kentucky increased to 105 in 1978, and were offered in both secondary and post secondary settings. In the 1978-79 fiscal year there were 26 child care programs and 31 commercial foods secondary reimbursed programs within Kentucky's 181 public school districts. New program requests continue to be highest for child care and commercial foods and manpower needs in these areas have not been met. According to the assessment of employment opportunities and occupational education outputs in Kentucky, commercial foods has a net supply/demand of -135, while child care has a net supply/demand of -3,354 (Kentucky Annual Program Plan for 1980 and Accountability Report for 1978, 1979, p. 185).

Prior to passage of the Education Amendments of 1976, evaluation of Kentucky's occupational home economics programs had been generally confined to sporadic supervisory visits by State staff. Title II of the Education Amendments of 1976 was unusually prescriptive in defining

federal and state roles in vocational evaluation, establishing a need, assuring funds were spent as intended, and stimulating action toward program improvement and redirection. This Amendment mandated that all programs funded with federal, state, and local funds be evaluated at least every five years (PL 94-482, p. 90 STAT 2187).

Therefore, during the 1978 fiscal year, Kentucky developed a program review system for the purpose of evaluating vocational home economics programs. Still lacking in their review system was information allowing comparison of the quality and effectiveness of instructional programs relative to program cost.

Statement of the Problem

As a result of the critical need for accountability and efficient budgeting, local administrators in the public schools of Kentucky are beginning to question the cost effectiveness of existing or proposed vocational home economics programs. To date, program effectiveness and cost efficiency data are not available to aid in planning and in making sound programmatic decisions concerning the allocation and utilization of scarce resources.

Purpose

The purpose of this study was to determine the cost effectiveness analysis measures: (1) program effectiveness, (2) cost efficiency, and (3) cost effectiveness ratio in selected reimbursed secondary commercial foods and child care programs in Kentucky. Determined also was the relationship between these measures and the variables: (1) program expenditures, (2) program age, and (3) community size. The study provided program effectiveness data which measured goal attainments for a program, that is, the extent to which specific target goals were achieved. Provided also were cost efficiency data to determine total cost which were prorated to the vocational program. Therefore, the study provided cost-effectiveness data which should be beneficial to vocational education planning efforts in Kentucky in the following ways: (1) as a decision model in allocating scarce resources to the most worthy programs, (2) as a means of evaluating existing programs in terms of effectiveness associated with costs, (3) as a method for developing new programs with maximum effectiveness at the optimum possible cost, and (4) by providing a rationale for supporting particular vocational home economics programs.

Specific Research Questions of the Study

This study has identified as dependent variables the three cost-effectiveness analysis measures: (1) program effectiveness, (2) cost efficiency, and (3) cost effectiveness ratio; as independent variables: (1) program expenditures, (2) community size (urban and rural), and (3) program age. Concerning the variables the study addresses the following specific research questions:

1. How program effective is each child care and commercial foods program?

2. How cost efficient is each child care and commercial foods program?

3. What is the relationship between each child care and commercial foods program effectiveness and cost efficiency (cost effectiveness ratio)?

4. Does the program effectiveness of child care programs differ significantly from the program effectiveness of commercial foods programs?

5. Does the cost efficiency of child care programs differ significantly from the cost efficiency of commercial foods programs?

6. Does the cost effectiveness ratio of child care programs differ significantly from the cost effectiveness ratio of commercial foods programs?

7. What is the relationship among program expenditures, community size, and program age to program effectiveness, cost efficiency, and the cost effectiveness ratio of the two program types?

8. Does the relationship of program expenditures, community size, and program age to program effectiveness, cost efficiency and the cost effectiveness ratio in child care programs differ significantly from that in commercial foods programs.

Assumptions of the Study

1. Child care and commercial foods occupational home economics are phases of the total secondary program of vocational home economics which are needed to meet manpower demands for entry-level employment.

2. Follow-up information obtained from program completers of occupational child care and commercial foods will be of assistance in evaluating existing programs in addition to the development and improvement of future programs.

3. Programs selected to participate are representative of the total secondary reimbursed child care and commercial foods programs in Kentucky.

4. Teachers in the selected programs of child care and commercial foods would cooperate in the study by providing needed program effectiveness and cost efficiency data.

5. The program completers of the 1978-79 school year will have been out of high school an adequate length of time to have begun work.

6. The completers of the programs selected would provide accurate information regarding their occupational instruction and their work experience.

7. Employers of students employed in a field related to training would provide accurate information regarding the adequacy of the students' vocational training and job performance.

8. Cost and program data of school corporations obtained from the Department of Education would be consistent and accurate.

Scope and Limitations of the Study

1. The study was limited to a randomly selected sample of secondary child care and commercial foods occupational home economics programs in Kentucky.

2. Follow-up data were collected only from students, both male and female, completing the program in the 1978-79 school year.

3. Only employers of students employed in a field related to training were surveyed.

4. The number of responses obtained from completers

and employers was limited by the number and accuracy of names and addresses provided by the teachers.

5. Cost data were limited to the accessability of public information through the Department of Education in Kentucky and the assistance of the teachers of the various programs.

6. The data collected for the three cost-effectiveness analysis measures would be processed according to the Kim and Harris Cost-Effectiveness Analysis Model for Secondary Vocational Programs (1976). This model appears in Appendix A.

7. Some cost data which may be relevant to this study were not available to the researcher (i.e., land and building cost).

Definition of Terms

Community Characteristics: community factors external to the school system to be used for interpretation of analytical results, (i.e., size of community).

Completers of Programs of Occupational Home Economics: students who have completed at least one year of training in an occupational home economics program.

Cost Effective Analysis: the measure of specified goal attainments of the program against the associated costs.

Cost Effectiveness Ratio: a criterion in judging program effectiveness in relation to associated costs.

Cost Efficiency: measured by the unit cost.

$$\text{Unit Cost} = \frac{\text{Total Cost of Program}}{\text{Unit of Output}}$$

Direct Program Cost: those costs directly related to the instruction (i.e., salaries of teaching staff, travel, fringe benefits, supplies and materials, and purchase of equipment.

Indirect Program Cost: costs for supportive services necessary in the operation of vocational programs which can be prorated to the vocational program.

Occupational Home Economics, Wage Earning Home Economics, Gainful Home Economics: terms which are used synonymously to refer to the vocational home economics program which provides training for entry-level employment in home economics related occupations.

Program Costs: total cost of programs.

Program Effectiveness: effectiveness is a measure of goal attainments for a program, that is, the extent to which specified target goals are achieved.

Program Objectives: the seven broad objectives which were a part of the Kim and Harris Model.

Program Review: term used in Kentucky for the instrument and the procedure developed for vocational program evaluation mandated by the Education Amendment of 1976.

Reimbursed Programs: those vocational programs receiving federal and state funds via the local boards of education in the public schools of Kentucky.

Rural Area: a county in which 59 percent or less of the population was classified as rural, according to the 1970 United States Census.

School Corporation: the level at which budget and expenditures are expressed (K-12).

Target Goals: thirty-three specified goals within the program objectives which were selected from the Kim and Harris Model.

Total Cost of Program: annual expenses for operating vocational programs at the local school level. Program costs include direct and indirect costs.

Unit of Output: number of student completers annually.

Urban Area: a county in which 60 percent or more of the population was classified as urban, according to the 1970 United States Census.

Vocational Program Rosters: accountability report for each secondary, post secondary, and adult program that is covered by the Kentucky State Plan and funded by vocational education funds.

Nature and Source of Data

Data Types

The study was designed to develop program effectiveness and cost efficiency data from selected programs in occupational home economics. Two occupational home

economics areas were chosen for the study--child care and commercial foods. Nine child care programs and 11 commercial foods programs were randomly selected based upon the percentage of Kentucky's population located in rural and urban areas.

For the implementation of the cost-effectiveness analysis study, the Kim and Harris Cost-Effectiveness Analysis Model for Secondary Vocational Programs (1976) was utilized as the format for data types and data collection instruments (see Appendix A). For executing a cost-effectiveness analysis study, Kim and Harris (1976) suggest the following steps (pp. 8-11):

1. Identify instructional program(s)
2. Identify population
3. Determine program (i.e., Child Care) objectives/ target goals
4. Collect program outputs/follow-up data
5. Analyze costs of vocational programs
6. Compute cost-effectiveness measures of program effectiveness, cost efficiency, and cost effectiveness ratio

Data types identified for this study were program objectives, program outputs, and program costs. Evaluation of program objectives and outputs required data on enrollees and completers from each program, and follow-up information on employment and advanced studies after graduation. Total cost of the programs included both direct and indirect

program costs. Cost data were classified according to the accounting system recommended by the United States Office of Education, which was adapted to Kentucky. The quantity of cost data collected for this study was by school corporation (i.e., the level (K-12) at which budget and expenditures are expressed in the state of Kentucky).

Data Collection Instruments and Forms

Numerous suggested data forms developed by Kim and Harris were utilized in part for the organization and hand tabulation of gathering data. The Student's Follow-up Program Rating Scale and the Employer's Opinion on Vocational Training of Employees questionnaires as developed by Kim and Harris (1976) were utilized in the study (see Appendix C). The output data from these questionnaires provided program effectiveness data for certain objectives which helped to measure the goal attainment of each program studied.

Analytical Forms and Techniques

Occupational home economics programs and follow-up data were analyzed for identifying target goals and associated outputs to determine program effectiveness measures. Total program costs were analyzed to produce cost efficiency measures. Finally, based upon the measure of program effectiveness and cost efficiency, a cost effectiveness ratio was computed. Hand tabulation was utilized to compute each of

these three measures for each of the 20 programs studies. For statistical analysis the data were analyzed using (SAS) Statistical Analysis Systems (Helwig and Council, 1979).

Organization of the Study

Chapter I introduces the problem, defines the terms used and states the specific research questions of the study. Chapter II contains a review of the literature and related research. Chapter III describes the procedure used in determining the study sample, the instruments and data sources utilized for data collection and presents the statistical methods used in analysis of the data. Chapter IV includes a presentation and analysis of the data collected in the study. Chapter V contains the findings of the study and the conclusions and recommendations made as a result of the study.

CHAPTER II

REVIEW OF LITERATURE

This chapter presents the need for vocational education program planning and evaluation and reviews a number of research studies regarding analysis of secondary level vocational programs. In the past, follow-up studies have frequently been utilized by researchers as a tool for evaluating vocational programs. However, today much effort is being directed toward a cost-effectiveness or cost-analysis evaluative approach. A search of literature revealed several examples of each of these program evaluation methods.

The major objectives of the review of the literature were: (1) to help develop the direction and purpose of this study, (2) to review program evaluative measures utilized by vocational educators, (3) to gain perspective into the appropriateness of cost analysis studies in vocational education, and (4) to determine the extent of evaluative studies in home economics.

The literature reviewed was divided into five major categories: (1) effectiveness of vocational education, (2) purpose of program evaluation, (3) cost analysis: a method of evaluation for vocational education, (4) cost analysis studies in vocational education, and (5) follow-up studies in vocational home economics.

Effectiveness of Vocational Education

The message that vocational-technical education is one of the most effective and widely discussed educational programs in our society is well understood by vocational teachers and administrators. But it is continuously necessary to communicate that message to legislators and to the general public. "Vocational education is the fastest growing area of education today. In the past ten years enrollments have increased by 300 percent. In 1978 there were seventeen million students enrolled in programs offered at the secondary, post-secondary, and adult levels" (American Vocational Association, 1981, p. 1).

While vocational education draws its financial support from the local, state, and federal levels, most of the support is derived from state and local sources. The federal government contributes the least (Swanson, 1978). In fact, Cronin (1976) has stated that "while federal programs multiply, state and local taxes together still account for more than 90 percent of the dollar outlay for public schools in this nation, yet the amount of federal regulation has increased in ways disproportionate to the amount of federal dollars received" (p. 499). Swanson (1978) further elaborated on this by pointing out that "vocational education is not a federal program, it is a national program

in the sense that it is a collection of state programs in which there is federal interest" (p. 87). State and local expenditures are now ten times as great as federal expenditures with an aggregate growth of approximately fifteen percent annually since 1974. In 1978, state and local dollars in Kentucky contributed approximately sixty percent of the total allocated dollars utilized in high schools for child care and commercial foods programs (Kentucky Annual Program Plan for 1980 and Accountability Report for 1978, 1979, p. 185).

As the quantity of vocational education is increased, quality must be assured. Many individuals are involved in the decision and operational processes of vocational education. To continue to communicate the effectiveness of vocational education, Bottoms (1979) maintained that one needs to know what is expected of a vocational program graduate. He cited seven legitimate expectations for graduates of vocational education programs (p. 16):

(1) program completion and retention in school

(2) placement in the occupational area for which student has prepared

(3) acquisition of technical knowledge and job skills

(4) employers' satisfaction with students

(5) state satisfaction with occupation and the preparatory program

(6) increase in school attendance and decline in disciplinary behavior

(7) selection of occupation and pursuit of specialized training

The willingness to support vocational education while turning down bond issues for other educational purposes is due mainly to the perceived importance of vocational education expressed in terms of: (a) potential benefit for trained individuals in working roles; (b) a method of quieting student unrest and reducing or preventing student dropout; (c) training individuals for the labor force, emphasizing their financial and social contribution to the economy; (e) decreasing unemployment of youth; and (f) establishing and maintaining a willingness of business and industry to work cooperatively with vocational programs (Office of Education, 1972, p. 1).

Purpose of Program Evaluation

Persons involved in the decision making process in vocational education must have valid and reliable information, both to assess the quality of current programs, and to plan for additional program needs. McKinney (1977) has stated that "program evaluation must be an integral and continuous part of vocational education. Unless programs are properly evaluated, educators will have no basis for making decisions on program development and revision" (p. 1). Moreover, as the public's dollar investment in education increases, there is a growing demand that all educational programs be efficient and effective. As Wentling and Lawson (1975, p. 12) stated:

> Occupational program evaluation includes activities that focus on both product and process. Process evaluation would include monitoring an instructor's performance, weighing the use of laboratory materials, or assessing the learning experiences found in the training or instructional setting. In contrast, product evaluation involves judging training outcomes and the costs incurred for a given program offering, relating these outcomes to prespecified objectives and considering both positive and negative unintended outcomes.

As stated by the Phi Delta Kappa Commission on Evaluation (1975), "evaluation is the process of delineating, collecting, and providing information useful for judging decision alternatives" (p. 13). Worther and Sanders (1973) offer this definition of evaluation: "evaluation is the determination of the worth of a thing. It includes obtaining information for use in judging the worth of a program, product, procedure, or objective or the potential utility of alternative approaches designed to attain specified objectives" (p. 200).

Evaluation, according to Price (1974), has two purposes: (1) to provide information for making decisions, including the allocation of resources; and (2) to provide either a sense of satisfaction or to present a challenge to do better. If the program evaluation data are not used for these purposes and, sooner or later, for the benefit of the learner, program evaluation is worthless.

Wentling (1975) perceived the importance and purposes of program evaluation as: (1) to aid in planning; (2) to

aid in decision making; (3) to upgrade program personnel; (4) to improve programs for students; and (5) to insure the accountability of expenditures. The purpose of evaluation according to Kaufman (1968) is to point out the strengths and weaknesses of a process, not to police the institutions in which the process occurs. He further stated that, "even when the process is being evaluated little or no consideration is given to costs, a necessary ingredient in any evaluation process" (p. 12). Accountability of expenditures according to Wentling and Lawson (1975), "requires a presentation of a program's results (e.g., placement of students in jobs, achievement scores, increased sales, more effective management) in relation to incurred costs and established objectives" (p. 20).

Vocational education legislation mirrors the above importance of evaluative information. Both the Vocational Education Amendments of 1968 and the Education Amendments of 1976 emphasized the need for program improvement and change. In fact, specific and extensive evaluation provisions are stated in the Vocational Education Amendments of 1976. Specified are follow-up studies using such effectiveness criteria as employment in training-related occupations, employer satisfaction, and continuing education (Public Law 94-482, 1976, p. 90, STAT. 2187).

Cost-Analysis--A Method of Evaluation for Vocational Education

For vocational educators the question is not whether to evaluate, but how? Much effort has been spent in evaluating vocational education. However, evaluation efforts are varied, and there appears to be no comprehensive and systematic approach to evaluation of vocational education.

Economic benefits of education are more closely observed and criticized by the public than by most federal and state projects. Communication of cost analysis data will likely have little impact on the public's critical view of educational endeavors; however, improved programs based upon costs and increasing benefits will ultimately be felt by the public.

For evaluating expenditures in vocational education, various models for cost analysis evaluation are becoming increasingly popular. Stromsdorfer (1972) viewed the following components as appropriate for evaluating any educational program (pp. 7-8):

(1) The program objectives or desired program outcomes must be specified.

(2) The processes of activities used to implement the program must be specified.

(3) A cost function or cost relationship based on the production function given for each activity must be specified.

(4) Benefit functions must be specified based on an appropiate index or set of indicators designed to measure program outputs.

(5) Costs and benefits must be compared.

Utilizing these components, various models have been developed. Cost analysis models can be categorized into one of two types: (a) cost benefit models or (b) cost-effectiveness models. Each can be defined in different ways from different perspectives.

Both cost benefit and cost effectiveness analysis are valid when evaluating programs from an economic standpoint. Cost-benefit analysis looks at both inputs (costs) and outputs (benefits) of a vocational program in dollars and cents. The inputs expressed in dollar value equal costs, and these costs are compared to the outputs, which, when expressed in dollars, equal benefits. Cost-effectiveness analysis looks at inputs in terms of costs which are expressed in dollars. However, the outcomes of the vocational program (i.e., the effectiveness), are measured in non-economic terms by determining to what extent predetermined objectives or target goals have been met. The comparison between input and output is measured by such techniques as performance ratio or cost-effectiveness ratio.

Cost-effectiveness studies as explained by Benson (1978) are similar to cost-benefit studies in that they

deal with some particular educational program, project, or type of expenditure, rather than assessing economy-wide aspects of schooling. Therefore, to undertake cost-effectiveness analysis one is not required to estimate benefits attributable to an educational program; rather, one can specify some educational objective and show how it can be met at minimal or optimum cost. "When the effectiveness of programs in achieving a particular goal (rather than monetary value) is linked to costs," Levin (1976) contends, "the approach is considered to be cost-effectiveness rather than cost-benefit analysis" (p. 9).

Wentling and Lawson (1975) differentiated between cost benefit and cost-effectiveness analysis as follows (p. 283):

> Cost benefit involves the ascertainment of costs and benefits of a single program for purposes of improving the relationship or ratio between the costs and benefits. Cost-effectiveness analysis requires identification of costs and benefits for more than one program. Cost-effectiveness analysis compares items with identical goals and the evaluator must have both cost and outcome data unique to each project in order for program comparisons.

Warmbrod (1977) summarized that cost-effectiveness analysis is the more appropriate technique for the objective evaluation of vocational education. Cost-effectiveness analysis of education is a methodological framework for making numerical estimates of the effects of particular training activities on selected output variables and the estimates of the costs of obtaining these effects.

Kim and Harris (1976), in their model for evaluating secondary vocational programs defined cost-effectiveness analysis as an analytical tool for assessing outcomes of programs by measuring specified goal attainments of the program against the associated costs. Furthermore, the following elements are identified in the Kim and Harris model (1976, p. 7):

(1) The Program or Alternatives. The first element is to define the operating program and identify certain goals or objectives.

(2) Program Objective(s). Program objectives are specified by certain target goals that the program should reach.

(3) The Costs. Costs are amounts expended for the purpose of achieving program objectives.

(4) The Output. Outputs are the products or expected results from the program. They are often numerically expressed indicating the actual attainment of program objectives.

(5) A Model. A model is a simplified representation of the relationships among the elements mentioned above. The purpose of the model is to produce critical measures to be used in the decision-making process.

(6) The Effectiveness. Effectiveness is a measure of the extent to which the objective is achieved.

(7) The Efficiency. Efficiency is a measure of the relationship between the output and the cost.

(8) A Ratio. An index ratio or criterion by means of which the desirability of a program is indicated on the basis of the degree of program effectiveness over costs.

Accordingly, the development of the cost-effectiveness analysis model developed by Kim and Harris for secondary vocational programs is directed toward (1) defining the vocational program, (2) specifying program objectives, (3) assessing outputs associated with objectives, (4) estimating program costs, and (5) producing three measures--program effectiveness, cost efficiency, and a cost effectiveness ratio (See Appendix A).

Cost-effectiveness analysis of vocational programs can be used as a means of securing optimization of resource allocation and utilization. As a method of program evaluation, cost-effectiveness analysis is utilized in developing new programs in addition to the evaluation of existing vocational programs. However, when one is involved in the process of ascertaining the cost-effectiveness of a program, it is wise and often necessary to consider possible methodological limitations associated with cost-analysis evaluation. Data in terms of cost are often inadequate, unreliable, or unavailable (Wentling and Lawson, 1975; Hun and Stromsdorfer, 1979; and Warmbrod, 1977). Moreover, non-economic benefits in terms of social welfare are often ignored in cost analysis. According to Hun and Stromsdorfer (1979), "to ignore these non-economic benefits and concentrate on economic benefits will underestimate the total benefit of vocational education" (p. 206). However, given these conceptual and practical

constraints on the application of cost analysis, cost-effectiveness analysis appears to be a most appropriate technique for the objective evaluation of vocational education programs.

Cost-Analysis Studies in Vocational Education

During the past several years, research studies on cost-analysis, cost-benefit, and cost-effectiveness analysis of secondary vocational programs have become more prevalent. However, as stated earlier, no cost-effectiveness or cost benefit studies have been identified which relate to occupational home economics.

Kaufman (1969) conducted a cost-effectiveness study of vocational and non-vocational education in secondary schools. For the study sample, given that earnings and employment were appropriate indices of the benefit of education, the study showed that vocational-technical education costs more than non-vocational-technical curricula, but is economically worthwhile. Kaufman found that "vocational-technical graduates earned significantly more and were employed significantly longer than the graduates of the other curricula" (1969, p. 14).

Marson, Weiner, Sorensen, Myrick, and Nierode (1978), through analysis of the economic costs and benefits of five adult vocational programs, showed that the benefits of vocational-technical education outweigh the costs. Four

post-secondary programs, two auto body, materials management, and electronics servicing, showed greater costs than benefits. As a second major emphasis of the study, non-economic benefits of (1) attitude changes, (2) job satisfaction, and (3) social involvement were compared by surveying the post-secondary graduates of the above five adult programs and a group of high school vocational graduates. Some major non-economic benefits found were that vocational-technical adult graduates received a larger amount of help from their post-secondary school regarding a job search than did their secondary counterparts. Post-secondary graduates also were found to enjoy greater job satisfaction than were high school vocational graduates.

McNeely (1974) compared the graduates of selected cooperative education programs to graduates of selected vocational-technical programs from twelve secondary schools in Missouri. His study was designed to answer the following questions: (1) What were the earning differences for graduates from the two program types as measured by annual earnings? (2) What was the relationship of selected sociodemographic variables to annual earnings? Conclusions were: (1) The mean earnings analysis of the first and fourth year following graduation revealed that the cooperative education males earned more in the first, fourth, and four years averaged than the vocational-technical education males. Females from

the cooperative education programs, however, earned consistently and significantly less than males. Additional analysis showed this difference was not based on sex but a combination of variables ($p<.05$). The difference between the earnings of vocational-technical and cooperative education females was significant ($p<.05$) as well as the difference between the cooperative education males and cooperative education females ($p<.05$); (2) through a combination of variables identifying a relationship between the graduates' annual earnings and socio-demographic characteristics significant relationships did exist ($p<.05$ - $p<.0001$); and (3) cost was the major factor causing the significant difference between the cooperative and the vocational-technical education programs on all the earnings/cost ratios in the study. In terms of investment analysis McNeely (1974) concluded cooperative education programs were the best when the two programs, cooperative education and vocational-technical education, were compared.

Stromsdorfer (1972) summarized various cost benefit studies. Each of the vocational-technical education studies summarized suggested that secondary vocational-technical graduates as a group do better (earn more) than academic or comprehensive high school graduates. But not all occupational specialties within vocational-technical education deliver equally well. The benefit-cost analysis, therefore, only

answers the question of which broad curriculum area society should invest its additional social capital in; it does not indicate which occupational skill or specialty one should choose within that broad curriculum. In Stromsdorfer's "review," he also discussed at length methodologies appropriate for cost-benefit, cost-effectiveness studies.

Harris (1972) in a state-wide benefit-cost study compared and analyzed the benefits, costs and benefit-cost ratio of students who attended four selected vocational education programs in Florida. Incorporating existing program cost data with data collected by student follow-up questionnaires, the study consisted of four phases. The four phases were concerned with: (1) selection of programs and classification of study participants; (2) developing methodologies for determining program benefits, costs, and benefit-cost ratios; (3) constructing historical benefit cost profiles for each vocational education program for secondary students and non-secondary students; and (4) incorporating the data and procedures used in the historical evaluation of the economic returns from vocational education programs into a benefit-cost planning model. The findings were summarized as follows (pp. 43-65):

> (1) The benefit-cost profiles which were constructed indicated that rates of return from investment in each of the four selected vocational education programs were positive and significant, with the average rate of return of public tax dollar being 76 percent per year and 54 percent per year on investment of students, time, and money.

(2) There were statistically significant differences ($p < .001$) in the rates of return on investment between air-conditioning programs and either the auto mechanics, practical nursing, or cosmetology programs. These differences were as follows:

	Public Return	Private Return
Air-Conditioning	$2,646	$2,230
Practical Nursing	1,252	1,056
Auto Mechanics	987	816
Cosmetology	393	333

(3) There were statistically significant differences ($p < .05$) in rates of return on investment between secondary (Public Benefits -$940; Private -$772), and non-secondary (Public Benefits -$1,240; Private -$1,047) students.

(4) On the average, student or private costs ($4,411) of vocational education were greater than public costs ($1,716). Public costs for each program were based on two factors: (1) the quantity of time a student spent in a given program; and (2) the value or cost per unit of time for vocational education. Private cost was based on (1) forgone earnings; and (2) direct school-related costs.

Finally, Hu (1968) made a cost benefit comparison study between vocational-technical education curricula and alternative curricula for the non-college attending students. This study was concerned with the optimum allocation of public resources in education. In comparing the costs of the different curricula with benefits measured in terms of earnings, the return to investment in the vocational-technical education curricula was significantly greater ($p < .05$) than the return to investment in the alternative curricula. Therefore, Hu (1968) concluded that "additional public funds should be spent on the vocational-technical curricula rather than the

non-vocational-technical senior high school curricula"; however, there was "no specific information on how much more should be spent" (p. 236).

Follow-up Studies in Vocational Home Economics

The need to evaluate occupational home economics programs is certainly recognized by home economists. Numerous follow-up evaluation studies have been completed, and some in the area of occupational home economics. However, to date, no occupational home economics studies were identified which emphasized cost-effectiveness evaluation.

To investigate the extent to which Illinois' gainful home economics cooperative education programs had contributed to employability of graduates, questionnaires were mailed to 1968 and 1970 graduates (Felstehausen and Howell, 1971). Information sought related to (a) current employment status, (b) graduate ratings on the contribution of the training to specific employment competencies, (c) current employer assessments of graduate readiness in specific employment competencies, and (d) entry level skills considered important for employment according to employers. Findings were as follows: (a) sixty-two percent of the graduates of the home economics programs were employed at the time of the study (fifty percent of food services trainees, twenty-five percent of child care trainees, and twenty-four percent of all other occupational home economics

areas); (b) most job satisfaction was received from working with people, while most job dissatisfaction was related to the job situation, (working conditions); (c) the greatest training contributions were in the areas of getting along with people, using time and energy wisely, and handling new or unpleasant situations. Entry level skills considered important by employers were generally in the areas of personal factors. Initial adjustments to employment conditions and specific work tasks were identified by employers as difficult areas for graduates.

In a follow-up study of secondary graduates of occupational home economics in Kentucky, Gasper (1977) summarized data intended to be helpful to administrators and educators in making decisions regarding the development and improvement of future programs of occupational home economics. There were fourteen objectives of the study. Follow-up questionnaires were sent to a random sample of 400 secondary graduates. These graduates completed training between 1971 and 1974 in (1) child care; (2) clothing services; (3) food service; and (4) home and community service. Findings were related to graduates' employment experiences, job satisfaction, job adjustment patterns, and evaluation of curricula. The following findings were reported (Gasper, 1977, pp. 136-139).

(1) More than half of the graduates in the total group who received training between 1971 and 1974 were employed. More of the graduates were employed in

jobs not related to training than in jobs in the area for which they received training or in related jobs. Graduates of food service had a higher percentage of employment in the area of training or in related jobs compared to graduates of child care services.

(2) The graduates of child care services experienced greater difficulty in finding work than the graduates of food service.

(3) Many graduates were not working in the area for which they received training because of the low pay of these jobs as compared to jobs in other areas.

(4) More than half of the graduates of all four occupational home economics program areas were employed in the area of food service.

(5) Job stability was lacking among the graduates. A majority had been working in their present position less than a year, with nearly half working in their present position for less than six months.

(6) The salaries or weekly wages were considered to be congruent with expectations for entry level employment.

(7) The graduates of food service felt greater satisfaction with their present employment in comparison with the graduates of child care services.

(8) The graduates in the total group experienced job adjustment problems most frequently in the areas of handling new situations and developing work speed. The graduates of child care services experienced more job adjustment problems in comparison to the graduates of food service.

(9) The training in occupational home economics contributed to the success of the total group in any job (in the area of training, related to training, or not related to training). The training was of greater contribution to the success of the graduates of food service in comparison to the graduates of child care services.

(10) Suggestions for changes in the training program to improve effectiveness in preparing graduates for employment were most frequently related to helping students find work, increasing the amount and scope of on-the-job experience, and providing help in the area of human relationships.

Gorman (1969) in an evaluation study obtained program planning information relating to occupational home economics programs. She surveyed business and industry in several population centers in Kentucky who included job descriptions involving home economics as determined by use of the Dictionary of Occupational Titles. The specific purposes of the study were (a) to determine job opportunities available to completers of occupational home economic programs; (b) to survey employment trends; and (c) to determine job requirements for these identified occupations.

Gorman found that there were 32,973 jobs related to home economics knowledge and skills being performed by Kentucky employees in 1969 with 12 job titles having the greatest employment opportunities (11 related to food industry). Of the 12 job titles leading in employment opportunities, only five (42 percent) required that the employees be high school graduates. Thus, the benefits for employees were meager, the hours long, wages minimum, and there was little opportunity for promotion. Yet, in each of these 12 leading job opportunities, employers replied that they would prefer employing persons with vocational training. Eleven of the 12

job titles required employees to be 21 years of age or older before employment. In discussing these findings, Gorman concluded that "This finding helps one to conclude that post high school occupational programs may be needed in vocational home economics" (p. 59). Based on the limited benefits cited by Gorman, however, different conclusions might very well be in order. Job requirements and response to listing of competencies from business and industry needed for various job performance indicated that curricula should be organized by job cluster rather than training for a specific job or program. Also, short-term courses for out-of-school youth were suggested by Gorman as a possibility for future program development, and the courses should be located in the area of Kentucky where the greatest opportunity for employment exists--namely the three major urban areas: Covington, Lexington, and Louisville.

Enoch (1977) conducted a follow-up study in Roanoke, Virginia, during the school year 1975-76 utilizing former vocational students of five different vocational programs and employers of these students. Occupational home economics was one of the areas studied. Researchers were interested in answering the following questions: (a) How many former students were employed in their field of training? (b) How many former students were enrolled in a post-secondary institution and were they studying in fields relating to their

training? and (c) What was the degree of satisfaction of both former students and employers of former students with the programs of study for vocational education?

The results of the study were intended to provide information for adjusting the Roanoke vocational programs to make them more effective and to provide information which would directly effect future decisions involving vocational education programs and education in general.

The study was limited to 381 students and 59 employers. Questionnaires returned by former students were 51 percent and from employers 75 percent of the total number surveyed. The study did not provide a breakout of numbers enrolled or returned questionnaires by occupational program area. However, of the 106 students employed full- or part-time, only two were in occupational home economics; of the 71 students enrolled in post-secondary vocational programs, either full- or part-time, only five were in occupational home economics. Nevertheless, when asked to grade the vocational programs, "as if you were a teacher, A is the best, F the worst" (Enoch, 1977, p.24), students grading occupational home economics graded their program higher than the other four vocational programs. Specific areas of instruction ranging from knowing how to apply for a job to knowing about work safety was highly rated by 70 percent of all students. On a five-point rating scale from excellent to none, employers

rated students employed by their firms with 25 percent an excellent rating and 52.5 percent a good rating. Regarding questions to employers relating to which aspects of training for employment was most important, no clear patterns of response emerged.

Geddis (1970), in a Utah project follow-up study, stated as one objective the desire "to provide information for cost-effectiveness analysis of vocational programs" (p. 1). Effectiveness was defined for this report in terms of "successful" former students, who in turn may be described as those who: (1) entered full-time employment in the field for which they were trained or a related field; or, (2) entered post-secondary educational programs in the same or a related field. All forty school districts in Utah participated in the project.

While cost analysis reporting to meet the above objective was not the primary focus of the study, cost analyses were reported based on the duplicated count of enrollments reported by each school of students in grades 10-12. Cost figures were reported by the districts, figures by school not being available, to the Vocational Division for end-of-year reimbursement with state and federal funds. Costs were based on salaries supplies, travel, and similar operating and maintenance costs only. No equipment costs, depreciation on equipment, and facilities costs were available. Moreover, incomplete data with regard to enrollment and cost information were apparent

in some districts. Money was reported to have been expended in 1969 in grades 10-12 by broad program areas, (i.e., Gainful Home Economics). There was no further breakout in the study for specified areas of occupational home economics in child care or commercial foods. Of the six program areas reporting secondary cost student enrolled data,

> "the highest median cost occurred in home economics programs, and the lowest in office occupations programs, while the single most expensive program per student enrolled was an agriculture program, and the single least expensive program was in office occupations" (p. 23).

Even though these conclusions were cited, Geddis emphasized the point that considerable "gaps exist" in the cost analysis data presented, and he recommended improving reporting data regarding successful students.

Dennison (1978) completed a study of 1975-76 secondary completers of occupational child care programs in Virginia which showed concern for the large numbers of completers of occupational home economics programs who are not employed in their field of training. The research questions of the study viewed employment, reasons for non-employment in training related occupations, and the identified variables relating to the employment of secondary occupational child care program completers. Of the total respondents 10.8 percent were employed, less than one percent were employed in a field related to training, and eight percent were employed in an unrelated field. In summary, Dennison (1978) concluded:

(1) The most frequent reason for non-employment in the child care field was that no jobs were available.

(2) Both employed and non-employed respondents preceived that jobs in the child care field were not plentiful.

(3) Twenty-eight percent of the respondents received no help from anyone in finding a job, however, the teacher had given the most help.

(4) Respondents working in non-related fields were receiving more money.

(5) Marriage and having children were not the major factors affecting employment in training-related jobs.

(6) Occupational child care programs were serving purposes other than preparation of students for gainful employment.

(7) For many students occupational child care programs were "developmental" not "terminal" (p. 127).

(8) An equally high percentage of both employed and unemployed respondents rated the quality of their training as good or excellent.

Summary

During the past decade there has been a growing interest in the economics of education. This economic view of education certainly concerns the efficiency and effectiveness with which the resources allocated to vocational education are utilized. It is, however, important to recognize that economic efficiency does not mean conducting education on a "least cost" basis but "the achievement of a given objective with the least cost or the maximization of given objective with a given cost" (Kaufman, 1968, p. 6).

This review of the literature has identified the need for a systematic analysis of the gains and costs of vocational programs. By emphasizing the measures of goal attainment of vocational programs against cost, instead of measuring only monetary units, cost-effective analysis is distinguished from cost-benefit analysis. Cost-effective analysis of vocational programs certainly can be utilized to establish better allocation of resources. It is also useful as a method of program evaluation. Moreover, for program planning purposes, cost-effectiveness analysis can help identify and maximize effectiveness of a program or produce the same level of effectiveness at a lower cost. Therefore, as the demand for accountability increases, so does the need for cost-effective analysis of vocational programs.

Research studies on cost-effectiveness analysis have quite often been under contract with the United States Department of Health, Education and Welfare. In addition, more efforts have been directed toward cost-benefit studies rather than to cost-effectiveness studies, while some authors appear to identify studies of cost-benefit and cost-effectiveness synonomously as cost-analysis studies. A limited number of analytical procedures or models for cost-effectiveness studies have been developed and most of the studies utilizing these ideas have been in industrial education programs, located in Vocational-technical secondary or post-secondary schools.

CHAPTER III

PROCEDURE

Introduction

Secondary programs of child care and commercial foods occupational home economics have continued to expand in Kentucky since 1965, when the five pilot programs were initiated. Statewide, 1,626 secondary eleventh and twelfth grade students were enrolled in the areas of child care and commercial foods in 1978. Occupational home economics continues to be an established part of the overall secondary program of studies for home economics in the state of Kentucky.

This study was undertaken to obtain cost-effectiveness information from (1) program completers, (2) employers of students working in the field related to training, (3) teachers of child care and commercial foods programs, and (4) cost data available from public information records.

Utilizing the Kim and Harris Model (1976), the following were major considerations of the researcher in conducting this cost-effectiveness study: (1) What vocational programs will be analyzed?; (2) What program objectives and specific target goals will be analyzed?; (3) How will program costs be included?; and (4) How will the data be analyzed? These considerations for designing the study are discussed in this chapter.

Population and Sample

Child care and commercial foods were the vocational instructional programs chosen for this cost-effectiveness analysis study. These programs of occupational home economics were the highest enrolled and had been in operation for the longest period in the state of Kentucky.

The population for the study was determined through consultation with the Home Economics Education unit staff, Bureau of Vocational Education, Kentucky. The population included all 26 child care and all 31 commercial foods secondary occupational home economics reimbursed programs offered in Kentucky during the 1978-79 school year.

Of the 26 secondary child care and 31 secondary commercial foods reimbursed occupational home economics programs offered in Kentucky during 1978-79; nine child care and 11 commercial foods programs were randomly selected. The total number of programs needed for an adequate sample was determined by the researcher's graduate committee. To obtain a random sample within each program area, with respect to rural and urban location, a list of occupational programs was obtained from the Home Economics Unit, Bureau of Vocational Education. After stratifying the schools according to rural and urban settings, the programs were listed alphabetically by county and were numbered consecutively.

A sample was then selected, using a table of random numbers. It was assumed that the utilization of the table of random numbers would produce a representative sample from the total population.

Furthermore, the researcher's committee suggested and agreed that to obtain an adequate sample of follow-up data, all program completers from the randomly selected programs and all employers of students employed in a field related to training should be surveyed.

Three hundred and fifty-four students were enrolled in the occupational programs studied by the researcher. Two hundred seventy-nine of these students were completers and 75 completed less than 50 percent of the program requirements. Of the completers, 48 were employed in a field related to training.

Instrumentation and Data Sources

Program objectives and specific target goals were identified from the Kim and Harris Model (1976, pp. 94-99) after consultation with leaders in home economics and other vocational educators at the state level and through review of evaluative studies of secondary programs of occupational home economics and vocational education. Those program objectives and target goals utilized in this study were as follows:

1. Aid students enrolled in vocational education to successfully complete a secondary occupational program.

1-a. percent of the students will be enrolled in the secondary vocational program during the 1978-79 school year.

1-b. percent of the students remaining in the program for the entire year will complete the program.

1-c. percent of student completions will have on-the-job occupational work experience.

1-d. percent less dropout rate will occur in the vocational program than the total dropout rate for the school.

1-e. percent of student completions will rate their program as satisfactorily meeting their educational goals.

1-f. percent of student completions would indicate their vocational program was a wise choice.

2. Assist special student groups to successfully achieve in a secondary vocational program.

2-a. percent of the disadvantaged persons (economically and/or educationally) enrolled will complete the secondary vocational program.

2-b. percent of the handicapped persons (physical and/or mental) enrolled will successfully complete the secondary vocational program.

2-c. percent of the students enrolled will represent the sex minority in those programs traditionally considered sex-stereotyped.

2-d. percent of the students classified in special student groups will rate their vocational program as satisfactorily meeting their education goals.

2-e. percent of the special student group completions will indicate they would recommend their vocational program to other students.

3. Provide vocational education for secondary school youth in accordance with their occupational preparation.

3-a. percent of the students available for and having sought employment will be employed full-time in less than fifteen weeks after graduation.

3-b. percent of the graduates available for and having sought employment in their specialization will be employed in their specialization in less than fifteen weeks after graduation.

3-c. percent of the graduates available for employment will be employed in their specialization or in a position they considered related to their area in less than fifteen weeks after graduation.

3-d. percent of the students responding on a follow-up study will indicate they are satisfied with their job.

3-e. percent of the students employed six (6) months after graduation will indicate that their skill preparation was adequate for their present job.

3-f. percent of the graduates will indicate they were adequately prepared to work with supervisors, co-workers and subordinates.

4. Provide leadership development activities for students enrolled in vocational programs through a youth organization functioning as an integral part of the vocational instruction.

4-a. percent of the students enrolled in the vocational program will have taken an active part in youth organization, (i.e., FHA) activities for the school year.

4-b. percent of youth organization participants will rate the activities as meeting their needs and interests.

5. Provide guidance and counseling services (career development) information appropriate to continued education or employment for students enrolled in vocational programs.

5-a. percent of the vocational students will have received career counseling and guidance services.

5-b. percent of the students will have received career development information during the school year 1978-79.

5-c. percent of the students will indicate career guidance and counseling services as adequate after completion of their vocational program.

5-d. percent of the students receiving exploratory career information will rate the experience as having influence on their career choice.

6. Provide vocational programs to fulfill the requirement of the labor markets and the employment community's manpower needs.

6-a. percent of the employers will value the vocational program as a source of trained manpower.

6-b. percent of the employers will indicate that the employees' vocational preparation was critical in the employment decision.

6-c. percent of the employers will rank the employees' skill and knowledge level at a minimum of fairly skilled or above.

6-d. percent of the employers will indicate job advancement is related to training received in the vocational education programs.

6-e. percent of the employers will rate the employees' on the job maturity factors at a minimum mean of good or above.

7. Encourage vocational graduates to continue their education after completion of their secondary programs.

7-a. percent of the students who complete the vocational program will be enrolled in advanced study programs.

7-b. percent of the students enrolled in advanced study programs will be in the same program specialty as their secondary vocational program.

7-c. percent of the students enrolled in advanced study programs will be in their specialization or programs which they considered related to their secondary vocational program.

7-d. percent of the students enrolled in advanced study programs will rate their secondary vocational program as instrumental in their decision to continue their education.

7-e. percent of the students enrolled in advanced study programs will indicate their vocational program prepared them for their pursuit of advanced study.

The implementation of cost-effectiveness analysis required various data pertaining to each of the three measures: (1) program effectiveness, (2) cost efficiency, and (3) cost effectiveness ratio. Each of the following input sources was essential in order to obtain the data relating to the study's seven program objectives and the 33 specified target goals. Examples of these data sources were:

1. Vocational Home Economics Teachers. Teachers provided selected information relating to direct program costs. They also provided an updated roster of student completers; their employment status and other information relating to students.

2. Public Records. Public records, available through the Kentucky State Department of Education, were used to obtain selected data relating to direct program costs.

3. Student Completers. A questionnaire developed by Kim and Harris (1976) was used to obtain information from

program completers regarding their satisfaction with the instructional programs (refer to Appendix C). Attention was directed toward the following areas: (1) satisfaction with vocational training, (2) adequacy of job preparation, (3) nature of present job (if employed), (4) youth organization participation, and (5) preparation for advanced studies. All program completers (N=279) were mailed this questionnaire.

4. Employer's of Student Completers. A questionnaire, developed by Kim and Harris (1976), was used to explore employers' opinions about the skill, knowledge, and abilities of employees who completed the vocational training program (refer to Appendix C). Practices such as cooperativeness, job interest, attendance and productivity were included. The questionnaire was mailed to employers of students coded on Kentucky's vocational program roster as employed in a field related to training.

Upon identification of the above data sources, implementation of the cost-effectiveness analysis study was possible.

Collection of Data

Upon the identification of the 20 programs to be included in this study, teachers of these programs were asked to assist with collection of the follow-up data.

Names and addresses of teachers in the 20 selected programs were obtained from the Home Economics Unit, Bureau of Vocational Education. Contact was made personally with most of these teachers at a summer home economics conference. Two weeks later, a letter, with a pre-addressed, stamped return envelope, was mailed to each teacher with instructions for updating the 1978-79 program rosters to be utilized for collection of follow-up data. A request also was made for a list of employers of those students working in a related field. At the same time, the teacher also co-signed, along with the researcher, the follow-up letter to be mailed to students and employers. This was done at the teacher's suggestion with the belief that this would increase student and employer responses. Letters of explanation and consent request were mailed to 279 students and 48 employers with the follow-up questionnaire attached. An enclosed pre-addressed, stamped, return envelope was provided for their convenience. A second letter with the same enclosures was mailed to non-responding students and employers twenty days following the mailing of the initial letter. The above mentioned letter from the researcher and the pre-designed enclosures are included in Appendix C.

Telephone contacts were made to each teacher of the 20 programs to reclarify mailing addresses of non-respondents. There was little success with this activity. However,

telephone contacts were made to a random sample of non-respondents of four programs in an attempt to determine if respondents differed significantly from non-respondents. Thirteen non-respondents were contacted by phone and their responses were compared with those of previous respondents. No significant differences were observed in responses between the two groups. Therefore, no further attempt was made to contact non-respondents.

Data Analysis

The dependent variables used in the data analysis were the three cost-effectiveness analysis measures: (1) program effectiveness, (2) cost efficiency, and (3) cost effectiveness ration. The independent variables used in analyzing the data were: (1) program expenditures, (2) community size (urban and rural), and (3) program age. The Statistical Analysis System (SAS) (Helwig and Council, 1979) was utilized to analyze these data. Descriptive statistics, correlation statistics, and nonparametric statistics were specifically utilized for analysis of the data. The descriptive statistical measures of mean and standard deviation were used to summarize the data and give an indication of how the programs varied among and between the two program types. The Pearson Product Moment Correlation was utilized to test the type and the strength of the relationship between the

dependent and independent variables among and between the two program types studied. Furthermore, the Wilcoxon Rank Sum Test was the nonparametric test utilized to contrast the performance between the two program types. This statistical test not only measured the direction of the difference between the two program types but also the relative magnitude of the difference. This nonparametric statistical test was chosen rather than the use of the parametric "t" test. Assumptions regarding population parameters which were required for the "t" test could not be met for the data in this study. Therefore, the Wilcoxon Rank Sum Test assumptions were more relevant for the data used in this study.

CHAPTER IV

PRESENTATION OF DATA AND ANALYSIS

Introduction

Data obtained from the students who completed secondary reimbursed programs of 20 randomly selected child care and commercial foods occupational home economics in Kentucky during 1978-79 are presented in this chapter as well as data from employers of students who were employed in a field related to training. Total program prorated cost data were obtained from official documents available through the Kentucky State Department of Education and program area teachers. These data were collected to provide three cost-effectiveness analysis measures: (1) program effectiveness, (2) cost efficiency, and (3) cost effectiveness ratio. These measures were designed to answer the eight specific research questions of the study which appear in Chapter I.

The discussion and analysis of the data are limited to the nine child care and 11 commercial foods programs randomly selected for this study. Data Classification was obtained by (1) identifying program objectives, (2) identifying specific target goals for each of these objectives, (3) determining actual outputs for these objectives, and (4) determining total cost of programs.

This chapter is divided into three major sections: (1) description of the population, sample and questionnaire return rates, (2) data classification by cost effectiveness analysis measure, and (3) statistical analysis of the eight specific research questions of the study.

Description of the Population and Sample

Program Description

In 1978 there were 26 child care and 31 commercial foods reimbursed secondary programs in operation in the state of Kentucky. This represented the total population from which the sample programs were selected. From these 57 programs, nine child care and 11 commercial foods programs were randomly selected for this study. These programs were located in either an urban or rural setting of Kentucky and varied in age. Of the 20 programs included in the study there were three urban child care and two urban commercial foods programs. Program age for both program types varied from 13 to one year in age; the mean age of the child care programs was 4.1 and the mean age of the commercial foods programs was 6.2.

Questionnaire Sample

For contribution toward the determination of the cost-effectiveness analysis measure (i.e., program effectiveness), questionnaires were mailed to both student completers of the selected programs and employers of students who were employed

in a field related to training. Of the 354 students enrolled in the occupational programs studied, 279 of these students were completers and thus represented the student sample used in this study. Forty-eight employers of students who were employed in a field related to training represented the employer sample.

Response to Mailed Questionnaire

Table 1 describes the response rate to the questionnaire which was mailed to students of the two program types. Two hundred seventy-nine questionnaires were mailed to completers of 20 secondary reimbursed child care and commercial foods programs in Kentucky. One hundred ninety-eight questionnaires (71 percent) were completed and returned to the researcher; 57 questionnaires (20 percent) were not returned; and 24 were returned by the post office as being "nondeliverable."

Table 2 describes the response rate to the questionnaire which was mailed to forty-eight employers of students who were employed in a field related to training in the two occupational home economics program types studied. Twenty-three questionnaires (48 percent) were completed and returned to the researcher; 25 (52 percent) were not returned.

Data Classification by Cost-Effectiveness Analysis Measures

For the determination of cost-effectiveness analysis data, the three measures of (a) program effectiveness,

TABLE 1

RESPONSE TO MAILED QUESTIONNARIES BY STUDENT COMPLETERS OF OCCUPATIONAL HOME ECONOMICS PROGRAMS

	Number	Percent
Child Care		
Returned Completed Questionnaires	97	78
No Response	23	18
Returned by Post Office	5	4
Total	125	100
Commercial Foods		
Returned Completed Questionnaires	101	66
No Response	34	22
Returned by the Post Office	19	12
Total	154	100

TABLE 2

RESPONSE TO MAILED QUESTIONNAIRES BY EMPLOYERS OF COMPLETERS OF OCCUPATIONAL HOME ECONOMICS PROGRAMS

	Number	Percent
Child Care		
Returned Completed Questionnaires	8	62
No Response	5	38
Returned by the Post Office	0	0
Total	13	100
Commercial Foods		
Returned Completed Questionnaires	15	43
No Response	20	57
Returned by the Post Office	0	0
Total	35	100

(b) cost efficiency, and (c) cost effectiveness ratio were obtained. These measures were computed using the formulas developed by Kim and Harris (1976).

Program Effectiveness

From the Kim and Harris Model, seven general program objectives and 33 specific target goals were specified for each of the 20 programs studied. These objectives and target goals were the criteria utilized to determine to what extent each program studied met the specified target goals (i.e., how program effective was each program?) A detailed listing of the program objectives and target goals and the extent to which each program met the 33 specified target goals appear in Appendix B. Tables 3 and 4 describe these program effectiveness scores for each program studied. As indicated in these tables, a sum of all effectiveness scores was computed to determine the composite program effectiveness score for each program. In addition, the sum of these scores were then divided by the specified number of target goals (33). From this computation the average program effectiveness score was obtained for each of the 20 programs. Furthermore, as indicated by Tables 3 and 4 the composite program effectiveness mean scores were higher for commercial foods programs (2881) than they were for the child care programs (1953). The average program effectiveness mean score also was greater for commercial foods programs (87.2) than for child care programs (59.2). Composite program effectiveness

TABLE 3

CHILD CARE PROGRAMS RANKED COMPOSITE AND AVERAGE PROGRAM EFFECTIVENESS

Program Identification	Composite Program Effectiveness**	Average Program Effectiveness
C *	3552	108
A *	3410	103
B *	2210	67
D	1909	58
I	1711	52
H	1400	42
F	1180	36
E	1152	35
G	1051	32
Mean Scores	1953	59.2

*Urban programs; remainder rural.

**Thirty-three composite scores were available for each program (N=9).

TABLE 4

COMMERCIAL FOODS PROGRAMS RANKED COMPOSITE AND AVERAGE PROGRAM EFFECTIVENESS

Program Identification	Composite Program Effectiveness**	Average Program Effectiveness
F	4730	143
K	4091	124
H	3947	120
D	3864	117
A *	3797	115
B *	2387	72
J	2081	63
E	1945	59
C	1711	52
I	1680	51
G	1457	44
Mean Scores	2881	87.2

*Urban programs; remainder rural.

**Thirty-three composite scores were available for each program (N=11).

scores were computed for each program using the following formula:

$$\text{Composite Program Effectiveness} = \frac{\text{Program Outputs}}{\text{Target Goals}}$$

In addition, an average program effectiveness index was derived for each program studied, by the following formula:

$$\text{Average Program Effectiveness} = \frac{\text{Composite Program Effectiveness}}{\text{Number of Effectiveness Scores Available}}$$

Cost Efficiency

To determine the cost efficiency of each program, total program costs were derived by combining direct and indirect program costs of instruction plus supporting services costs prorated to each program. Direct costs of instruction includes:

1. Portion of the teacher's annual salary received for teaching the occupational program.
2. Prorated fringe benefits for the teaching staff within the instructional program.
3. Travel costs for instruction.
4. Cost of instructional supplies and materials prorated to the instructional program.
5. Annual prorated costs of classroom and laboratory facilities and equipment used by the instructional program.

The sum of all costs for these five items constituted the direct instructional costs.

Indirect program costs were prorated to the vocational instructional program for each of the following:

1. Student support services costs prorated to the vocational instructional program (i.e., attendance, health, and guidance).

2. Instructional staff services costs associated with improvement of instruction prorated to the instructional program (i.e., instructional supervision and educational services).

3. General administration services costs associated with establishing and administering policy within the school district prorated to the instructional program (i.e., boards of education and administration services).

4. Business services costs prorated to the instructional program (i.e., pupil transportation and food service). The sum of all costs from these four measures constituted the indirect program costs for each program.

After these prorating procedures were completed, the sum of direct and indirect costs were combined to represent the total cost of each program studied.

Finally total program cost data were used to compute, by unit costs of student completers in the program, cost efficiency measures for each program studied. This was

computed by dividing the total program costs by the total number of program completers for each of the 20 programs studied. Cost efficiency measures per student completion were computed in the following manner:

$$\text{Cost Efficiency} = \frac{\text{Total Program Costs}}{\text{Total Program Completers}}$$

For a detailed presentation of these cost efficiency data refer to Tables 5 and 6. These tables reveal that the average number of program completions was the same for both program types. Nevertheless, there was a large difference between the mean program costs of the child care ($56,959) and commercial foods programs ($37,638). There was also a large difference between the mean cost efficiency of the two program types ($5,040 versus $2,903).

Cost Effectiveness Ratio

Finally, based upon the measures of program effectiveness and cost efficiency, a cost effectiveness ratio for each program was determined. These cost effectiveness ratios are shown in Tables 7 and 8.

Cost effectiveness ratios indicated the degree of goal attainment per unit cost (i.e., number of program completers), indicating which program among all those studied, performed in the most program effective and cost efficient manner. Thus, the higher the cost effectiveness ratio, the more program

TABLE 5

CHILD CARE PROGRAMS RANKED ACCORDING TO THEIR COST EFFICIENCY

Program Identification**	Direct Program Cost	Indirect Program Cost	Total Program Costs	Program Completers	Cost Efficiency
F	$ 5720	$ 30745	$ 36465	17	$ 2145
D	5543	37756	43299	17	2547
H	5415	29978	35393	13	2723
G	7172	34117	41289	15	2753
C *	11825	44025	55850	20	2793
E	5738	65534	71272	13	5482
B *	6514	102229	108743	16	6796
A *	7354	88724	96078	12	8007
I	5476	18763	24239	2	12119
Mean Scores	$ 6571	$ 50208	$ 56959	14	$ 5040

*Urban programs; remainder rural.

**N=9

TABLE 6

COMMERCIAL FOODS PROGRAMS RANKED ACCORDING TO THEIR COST EFFICIENCY

Program Identification**	Direct Program Cost	Indirect Program Cost	Total Program Costs	Program Completers	Cost Efficiency
F	$ 10055	$ 33592	$ 43647	25	$ 1746
I	5660	23329	28989	13	2230
D	4493	22331	26824	12	2235
K	5602	22741	28343	12	2362
C	4040	28087	32127	13	2471
J	9044	52221	61265	22	2785
B *	15046	36426	51472	17	3028
G	7336	30698	38034	12	3170
E	5439	23979	29418	9	3269
A *	7130	40634	47764	14	3412
H	5850	20282	26132	5	5226
Mean Scores	$ 7245	$ 30393	$ 37638	14	$ 2903

*Urban programs; remainder rural.

**N=11

TABLE 7

CHILD CARE PROGRAMS RANKED ACCORDING TO THEIR COST EFFECTIVENESS RATIO

Program Identification (N=9)	Average Program Effectiveness	Cost Efficiency	Cost Effectiveness Ratio
C *	108[a]	$ 2793	.04[c]
D	58	2547	.02
H	42	2723	.02
F	35	2145[b]	.02
A *	103	8007	.01
B *	67	6796	.01
E	36	5482	.01
G	32	2753	.01
I	58	12119	.004
Mean Scores	59.2	$ 5040	.016
Standard Deviation	28.66	3399.23	.010

*Urban Programs; remainder rural.

[a]Most program effective.

[b]Most cost efficient.

[c]Most effective and efficient.

TABLE 8

COMMERCIAL FOODS PROGRAMS RANKED ACCORDING TO THEIR COST EFFECTIVENESS RATIO

Program Identification (N=11)	Average Program Effectiveness	Cost Efficiency	Cost Effectiveness Ratio
F	143[a]	$1746[b]	.08[c]
K	124	2362	.05
D	117	2235	.05
A *	115	3412	.03
H	120	5226	.02
B *	72	3028	.02
E	59	3269	.02
C	52	2471	.02
J	63	2785	.02
I	51	2230	.02
G	44	3170	.01
Mean Scores	87.2	$2903	.03
Standard Deviation	36.37	927.75	.02

*Urban programs; remainder rural.

[a]Most program effective.

[b]Most cost efficient.

[c]Most effective and efficient.

effective and cost efficient the program becomes. The cost effectiveness ratio was computed in the following manner:

$$\text{Cost Effectiveness Ratio} = \frac{\text{Average Program Effectiveness}}{\text{Cost Efficiency}}$$

Statistical Analysis of Study's Research Questions

The research questions of the study, which appear in Chapter I, were developed to present cost-effectiveness analysis data. Analytical results of such data would be utilized for program evaluation, development, and planning. Data results provided by the eight research questions were: (1) descriptive and summary data by individual programs studied, (2) program type comparison data between child care and commercial foods, and measure of relationships between and among selected variables of the study.

Research Question 1. How program effective is each child care and commercial foods program?

Research Question 2. How cost efficient is each child care and commercial foods program?

Research Question 3. What is the relationship between each child care and commercial foods program effectiveness and cost efficiency (cost effectiveness ratio)?

The program effectiveness measure, cost efficiency measure, and cost effectiveness ratio, provided a basis for answering the above three research questions. The cost-effectiveness

data, presented in Tables 7 and 8, indicate the higher the program effectiveness measure the more program effective the program. The program effectiveness measure for child care program C (an urban program) and commercial foods program F (a rural program) were the most program effective among their respective program types. At the same time, child care program G and commercial foods program G (each rural programs) were found to be the least program effective among their respective program types.

Child care program F and commercial foods program F were considered to be the most cost efficient as indicated by the lowest cost efficiency measure. These programs were both in rural areas. The least cost efficient programs were child care program I and commercial foods program H.

Furthermore, regarding the cost effectiveness ratio, referring to the same tables and indicated by the highest score, child care program C (an urban program) and commercial foods program F (a rural program) were judged to be the most effective and efficient among their respective program types. As can be seen in Tables 7 and 8, program effectiveness, cost efficiency, and cost effectiveness ratio varied considerably among the programs studied.

Research Question 4. Does the program effectiveness of child care programs differ significantly from the program effectiveness of commercial foods programs?

Research Question 5. Does the cost efficiency of child care programs differ significantly from the cost efficiency of commercial foods programs?

Research Question 6. Does the cost effectiveness ratio of child care programs differ significantly from the cost effectiveness ratio of commercial foods programs?

Three Wilcoxon Ranked Sum Tests were computed to compare the mean ranks of the child care programs and the commercial foods programs on three dependent measures. These measures were program effectiveness, cost efficiency, and the cost effectiveness ratio. These data are shown in Table 9.

It can be seen from this table that there were no statistically significant differences ($z = 1.29$; n.s.) between the mean ranks of child care and commercial foods programs when the dependent measure was cost efficiency. Therefore, the cost efficiency measures between the two program types were not significantly different from one another. However, significant differences were found when the program effectiveness and cost effectiveness ratio were the dependent measures. Program effectiveness differed significantly ($z = -2.01$; $p<.05$) between the child care programs and the commercial foods programs. In addition, the cost effectiveness ratio differed significantly ($z = -2.05$; $p<.05$) between the child care programs and the commercial foods programs. Thus, the

TABLE 9

MEAN RANKS USED IN WILCOXON RANK SUM TEST

Cost-Effectiveness Analysis Measures	Program Types (Mean Ranks) Child Care (N=9)	Commercial Foods (N=11)	z
Averaged Program Effectiveness	7.6	12.9	-2.01*
Cost Efficiency	12.3	9.0	1.29
Cost Effectiveness Ratio	7.4	13.0	-2.05*

*$p < .05$.

commercial foods programs had a significantly higher program effectiveness and cost effectiveness ratio than child care programs.

Research Question 7. What is the relationship among program expenditures, community size, and program age to program effectiveness, cost efficiency, and the cost effectiveness ratio of the two program types?

Table 10 presents the intercorrelations for the entire data set. This includes both child care and commercial foods programs. Correlation coefficients were computed for the variables: (a) program effectiveness, (b) cost efficiency, (c) cost effectiveness ratio, (d) community size, (e) program age, and (f) program expenditures. Those correlations which were found to be significant beyond the .05 or .01 level are identified with asterisks.

A significant positive correlation ($r = .75$; $p < .01$) was found between program effectiveness and the cost effectiveness ratio. This indicated that as program effectiveness increased the cost effectiveness ratio also increased. The significant negative correlation ($r = -.51$; $p < .05$) between the cost effectiveness ratio and cost efficiency indicates that as the cost effectiveness ratio increased the cost efficiency of the program decreased. Program effectiveness was also found to increase as program age increased. The positive relationship was demonstrated by a significant correlation ($r = .72$; $p < .01$) between

TABLE 10

INTERCORRELATIONS OF VARIABLES BETWEEN CHILD CARE AND COMMERCIAL FOODS PROGRAMS
(N=20)

Variable	Program Effectiveness	Cost Effectiveness Ratio	Cost Efficiency	Program Expenditures	Program Age	Community Size
Program Effectiveness	1.0	.75**	-.08	.004	.72**	-.30
Cost Effectiveness Ratio		1.0	-.51*	-.25	.70**	.07
Cost Efficiency			1.0	.32	-.34	-.22
Program Expenditures				.10	.006	.66*
Program Age					1.0	-.33
Community Size						1.0

*P<.05.

**P<.01.

program effectiveness and program age. The cost effectiveness ratio also increased as program age increased as indicated by the significant positive correlation ($r = .70$; $p < .01$). Furthermore, a significant correlation ($r = .66$; $p < .05$) between the program expenditures and the size of the community indicated that as the size of the community decreased, program expenditures also decreased. No other significant relationships were found among the variables.

Research Question 8. Does the relationship of program expenditures, community size, and program age to program effectiveness, cost efficiency, and the cost effectiveness ratio in child care programs differ significantly from that in commercial foods programs?

An intercorrelation matrix containing all the variables was calculated separately for the child care and the commercial foods programs. Table 11 shows the intercorrelations between each of the measures for the child care programs and Table 12 shows the intercorrelations between each of the measures for the commercial foods programs. For both child care and commercial foods programs, statistically significant correlations ($p < .05$) did exist. In examining the intercorrelations between the variables for both program types the child care programs indicated statistically significant correlations between program effectiveness and program age ($r = .86$; $p < .01$) and between program effectiveness and

TABLE 11

INTERCORRELATIONS OF VARABLES AMONG CHILD CARE PROGRAMS
(N=9)

Variable	Program Effectiveness	Cost Effectiveness Ratio	Cost Efficiency	Program Expenditures	Program Age	Community Size
Program Effectiveness	1.0	.44	.19	.48	.86**	-.88**
Cost Effectiveness Ratio		1.0	-.64	-.15	.75*	-.28
Cost Efficiency			1.0	.21	-.20	-.18
Program Expenditures				1.0	.22	-.77*
Program Age					1.0	-.68*
Community Size						1.0

*P<.05.

**P<.01.

TABLE 12

INTERCORRELATIONS OF VARIABLES AMONG COMMERCIAL FOODS PROGRAMS
(N=11)

Variable	Program Effectiveness	Cost Effectiveness Ratio	Cost Efficiency	Program Expenditures	Program Age	Community Size
Program Effectiveness	1.0	.80**	.01	-.12	.58	-.08
Cost Effectiveness Ratio		1.0	-.54	-.06	.71*	.14
Cost Efficiency			1.0	-.12	-.50	-.17
Program Expenditures				1.0	.02	-.50
Program Age					1.0	-.05
Community Size						1.0

*P<.05.

**P<.01.

community size ($r = -.88$; $p<.01$). Neither of these correlations were statistically signigicant for the commercial foods programs. This indicated that as age of child care programs increased, program effectiveness of the programs increased also. This was not found to be the case with the commercial foods programs. In addition, for the child care programs, the data indicated that as the community size increased the program effectiveness decreased ($r = -.88$; $p<.01$). Again, this was not found to be the case with commercial foods programs.

The intercorrelations between program age and the cost effectiveness ratio of both the child care programs ($r = .75$; $p<.05$) and the commercial foods programs ($r = .71$; $p<.05$) were statistically significant. Thus as the age of the program increased, so did the cost effectiveness ratio of both program types. A statistically significant intercorrelation ($r = .80$; $p<.01$) existed among the commercial foods programs between program effectiveness and the cost effectiveness ratio. This indicated that as the program effectiveness of commercial foods programs increased, so did the cost effectiveness ratio. This was not found to be the case among child care programs. Furthermore, for the child care programs only, a statistical significant intercorrelation was found between the size of the community and the program expenditures ($r = -.77$; $p<.05$). Also a statistical significant intercorrelation existed

between the age of child care programs and size of the community ($r = -.68$; $p < .05$). Both of these intercorrelations indicated that as the community size decreased, both program expenditures and program age of child care programs increased. No other statistically significant intercorrelations existed for either child care or commercial foods program types.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter summarizes the purpose of the study, the research procedures, the analysis of data, and the findings. Conclusions drawn from the study and recommendations based on these conclusions are also presented. Finally, suggestions for further research are made.

General Summary

The purpose of this study was to determine program effectiveness, cost efficiency, and the cost effectiveness ratio of selected reimbursed secondary child care and commercial foods programs in Kentucky and to determine the relationship between these measures and the variables program expenditures, program age, and community size. This study will provide cost effectiveness data based on the extent to which goal attainment is achieved for each program type. Such data should be beneficial to vocational education planning efforts in Kentucky in the following ways: (1) as a decision model in allocating scarce resources to the most worthy programs; (2) as a means of evaluating existing programs in terms of effectiveness associated with costs; (3) as a method for developing new programs with maximum effectiveness at the optimum possible

cost; and (4) by providing a rationale for supporting particular vocational home economics programs.

Previously designed student and employer follow-up questionnaires were selected in addition to other program related information to obtain program effectiveness data for the following broad program objectives: (1) aid students enrolled in vocational education to successfully complete a secondary occupational program; (2) assist special student groups to successfully achieve in a secondary vocational program; (3) provide vocational education for secondary school youth in accordance with their occupational preparation; (4) provide leadership development activities for vocational students through a youth organization functioning as an intergral part of the vocational institution; (5) provide guidance and counseling service information appropiate to continued education or employment for students enrolled in vocational programs; (6) provide vocational programs to fulfill the requirement of the labor markets and the employment community's manpower needs; and (7) encourage vocational graduates to continue their education after completion of their secondary program. For each of these broad program objectives, specific, measurable target goals were specified. In all, there were 33 target goals contained within the seven objectives for each program type.

Follow-up questionnaires were mailed to both student and employer samples which included: (1) all program completers of the 11 commercial foods (N=154) and the nine child care programs (N=125), and (2) all employers of students employed in a field related to training (N=48).

Program cost data for determining cost efficiency measures were collected for each of the 20 occupational home economics programs included in the study. Cost data were classified into direct and indirect categories and prorated to the vocational program in order to identify total annual program costs. The majority of the cost data was obtained from public information of local school districts' financial reports, while additional data were provided by the program area teachers. Finally, a cost effectiveness ratio was determined for each program based on program effectiveness and cost efficiency measures.

Following the completion of the data collection, the information was hand tabulated to determine a program effectiveness, cost efficiency, and cost effectiveness ratio for each of the programs included in the study. The data were then coded onto optical scanning sheets, and machine punched onto computer cards. Statistical Analysis Systems (SAS), (Helwig and Council, 1979) was utilized in analyzing the data.

Analysis Rationale

Research questions were analyzed as follows:

1. Research Questions 1-3 were analyzed to determine the cost-effectiveness analysis measures for each of the 20 programs included in the study.

2. Research Questions 4-6 were analyzed to determine if significant differences of the three cost-effectiveness analysis measures existed between the two program types. Utilizing the Wilcoxon Ranked Sum Test the mean ranks of the child care and the commercial foods program were compared for the three cost-effectiveness analysis measures.

3. Research Question 7 was analyzed to determine the relationship between the independent variables: (a) program expenditures, (b) community size, and (c) program age; to the three cost-effectiveness analysis measures of all programs studied. Pearson Product Moment Correlation coefficients for the entire data set were computed for the independent and dependent variables.

4. Research Question 8 was analyzed by program type to determine if a relationship between the independent variables and each of the three cost-effectiveness analysis measures were significant. Intercorrelations of the independent variables with the three cost-effectiveness analysis measures were computed for both child care and the commercial foods program types.

Findings

The major findings summarized from the research questions of the study are presented as follows:

1. Based on the average program effectiveness indices, child care program C and commercial foods program F were the most program effective among their respective program types. The child care program was located in an urban community while the commercial foods program was located in a rural community. Child care program G and commercial foods program G, both located in rural areas, were the least program effective. Refer to Appendix B for target goal summary data.

2. Child care program F and commercial foods program F were considered to be the most efficient on the basis of the cost efficiency index. Both of these programs were located in rural communities. Child care program I and commercial foods program H were the least cost efficient. Both of these programs were located in rural areas and indicated the two lowest program completion rates.

3. When comparing the relationship between the program effectiveness and cost efficiency of each program (cost effectiveness ratio) program C of child care and program F of commercial foods were judged the most effective and efficient among their respective program types. The child care program was located in an urban community while the commercial foods program was located in a rural community.

4. When the dependent measure was program effectiveness, there was a significant negative difference ($z = -2.01$; $p < .05$) between the mean ranks of the child care and commercial foods programs, indicating that commercial foods programs were significantly more program effective.

5. When the dependent measure was cost efficiency, there was no significant difference between the mean ranks of child care and commercial foods program types.

6. When the dependent measure was the cost effectiveness ratio, there was a significant negative difference ($z = -2.05$; $p < .05$) between the mean ranks of the child care and the commercial foods programs. This difference indicated that commercial foods programs were the most effective and efficient of the two program types.

7. Because the cost effectiveness ratio is determined by the relationship of program effectiveness to cost efficiency, the following significant correlations were found: (a) as the program effectiveness ratio increased, the cost effectiveness ratio increased ($r = .75$; $p < .01$) and (b) as the cost effectiveness ratio decreased, cost efficiency of the program increased ($r = -.51$; $p < .05$).

8. As the age of the programs increased, the program effectiveness ($r = .72$; $p < .01$) and the cost effectiveness ratio ($r = .70$; $p. < .01$) also increased significantly.

9. There was a significant correlation ($r = .66$; $p < .05$) between community size and program expenditures. This indicates that as community size decreases program expenditures decreases.

10. As the age of the child care and commercial foods program increased, the cost effectiveness ratio increased significantly. Statistical significance for child care programs was indicated by a positive correlation of $r = .75$; $p < .05$. For commercial foods programs the correlation was $r = .71$; $p < .05$.

11. Rural child care programs were found to be significantly less program effective than urban child care programs ($r = -.88$; $p < .01$). No major differences existed between these variables in the commercial foods programs.

12. Program expenditures for rural child care programs were significantly less than those located in urban settings. No major differences existed between these variables with regard to the commercial foods programs.

13. Rural child care programs were found to be significantly newer than urban child care programs ($r = -.68$; $p < .05$). No major differences existed between these variables in the commercial foods programs.

14. As the program effectiveness of commercial foods programs increased significantly, so did the cost effectiveness ratio ($r = .80$; $p < .01$). No significant differences were found between these variables in the child care programs.

15. The results of this study revealed that the percent of student completers employed in their field of training was higher for commercial foods programs (17 percent) than it was for child care programs (10 percent). The related employment rate of completers of either program type was not very impressive.

Conclusions

The following conclusions were warranted when comparing the findings of other follow-up and cost analysis studies with the findings of this study.

1. Cost efficiency data and program effectiveness indices can be computed for each child care and commercial foods program. Moreover, such data should be useful to program planners and curriculum decision makers who increasingly must allocate scarce resources among programs. The data herein reported have made it possible to identify both the least and the most effective and efficient programs of child care and commercial foods.

2. Cost-effectiveness data can be a useful tool for identifying the program type which is most efficient and effective between the two program types compared. However, it should be noted that such data become only one of many input sources which should be used in making programmatic decisions.

3. Variations in direct program costs and total program costs would be useful in analyzing programs which are most efficient versus those which are least efficient. Such an analysis can be used to improve programs which are found to be least cost efficient.

4. The cost-effectiveness analysis measures of this study will be of primary value in making improvements among and between programs.

Recommendations

The findings of this study suggest several recommendations to teachers, school administrators, and the Department of Education, Bureau of Vocational Education planners of occupational home economics programs throughout Kentucky. Based on the findings and conclusions of this study, the following recommendations seem warranted:

1. A special effort for continued review of occupational home economics programs should be made based upon expected program outputs. Utilization of the cost-effectiveness measure of program effectiveness, cost efficiency, and a cost effectiveness ratio are indices which could be computed to evaluate this effort. Moreover, program deletions should be considered for programs which consistently demonstrate both ineffectiveness and cost inefficiency.

2. Those persons responsible for planning the Home Economics curriculum should study carefully the objectives and specifice target goals for the occupational child care and commercial foods programs. Expected program outputs should be prioritized and cost-effectiveness data should be periodically obtained.

3. New occupational home economics programs should continue to be funded based upon the current and anticipated occupational outlook of that community.

4. Efforts should be made to determine the students' vocational objective, interests, and abilities prior to enrollment in an occupational home economics program. A better match between students' vocational objectives and program goals might significantly increase training-related placement rates.

Recommendations For Further Research

The results of this cost effectiveness research was not intended to be used as exclusive criteria in the (1) planning, (2) development, and (3) evaluation of secondary occupational child care and commercial foods programs in Kentucky. Additional research is needed utilizing this and other program evaluation methods. Occupational home economics could, however, benefit by utilizing

cost-effectiveness research for program planning, development, and evaluation. Additional research is needed in the following areas:

1. Research to determine the cost effectiveness of occupational child care and commercial foods programs operated directly by the Kentucky State Department of Education.

2. Research to compare cost effectiveness of occupational child care and commercial foods programs operated by local boards of education in Kentucky and those operated directly by the State Department of Education.

3. A comprehensive study to determine which occupational programs will be needed in Kentucky to meet future needs.

4. A study of employers of graduates of occupational home economics programs to determine the relationship between vocational training and job success.

5. Research to specifically identify major occupational home economics competencies taught in local high schools and how employers view the need for these competencies.

6. A replication of this study within the state of Kentucky to compare findings.

7. Replication of this study in other states from which results could be compared to determine differences in programs among the states.

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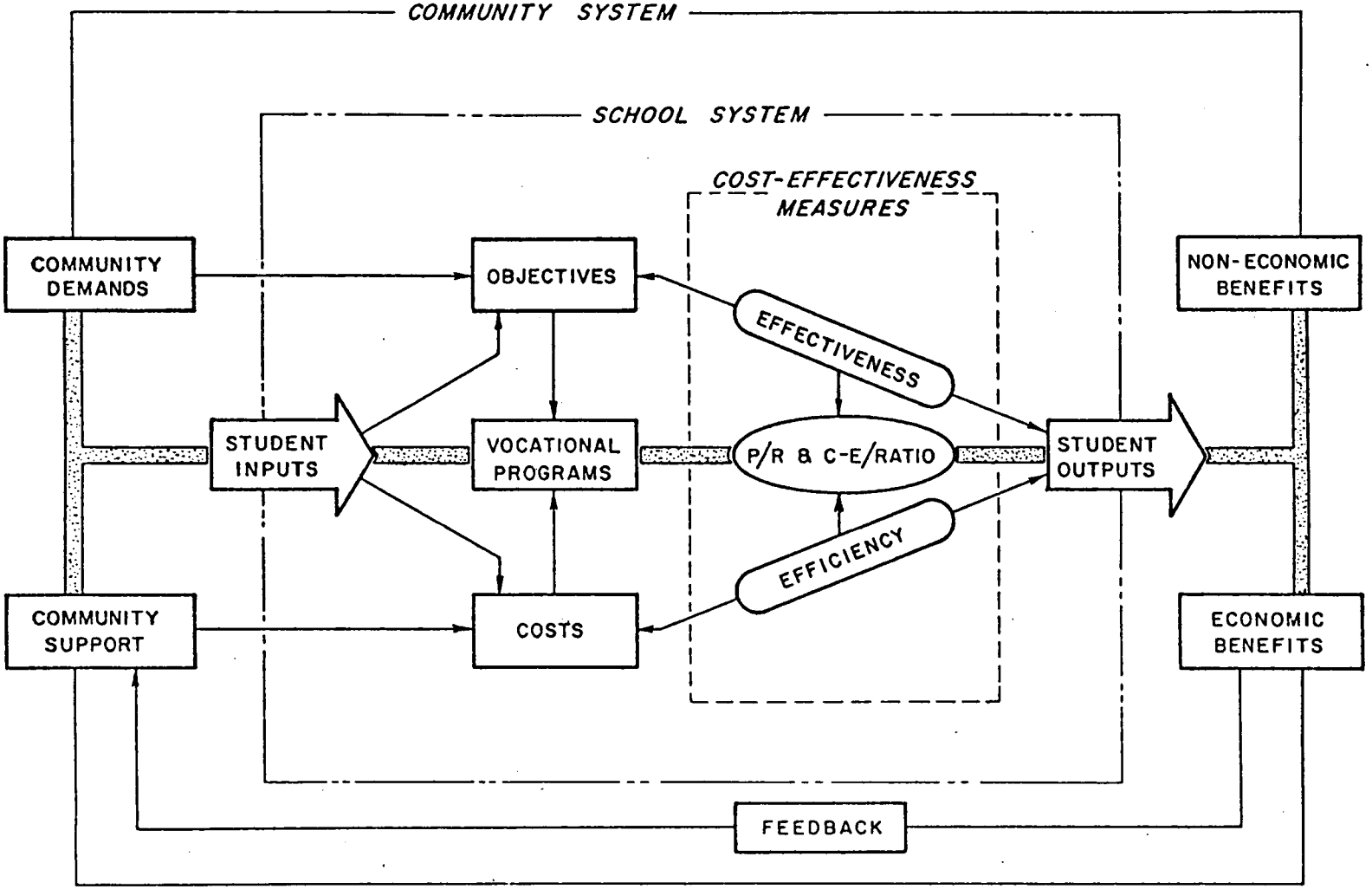
APPENDIXES

APPENDIX A



A CONCEPTUAL MODEL FOR THE ANALYSIS OF COST-EFFECTIVENESS FOR VOCATIONAL EDUCATION

APPENDIX B

PROGRAM OBJECTIVES AND TARGET GOALS FOR CHILD CARE PROGRAMS

	Objectives (N=33)	Target Goal (Percent)	A	B	C	D	E	F	G	H	I
1:	Aid students enrolled in vocational education to successfully complete a secondary occupational program.										
1-a.	Percent of the students will be enrolled in the secondary vocational program during the 1978-79 school year.	100	1	4	4	9	3	5	3	3	3
1-b.	Percent of the students remaining in the program for the entire year will complete the program.	100	75	100	69	89	87	100	88	100	20
1-c	Percent of student completions will have on-the-job occupational work experience.	100	100	87	100	100	100	100	100	100	100
1-d.	Percent less dropout rate will occur in the vocational program than the total dropout rate for the school.	25	48	38	13	16	20	20	4	12	12
1-e.	Percent of student completions will rate their program as satisfactorily meeting their educational goals.	60	83	105	83	78	90	58	33	115	167
1-f.	Percent of student completions would indicate their vocational program was a wise choice.	75	89	100	87	63	72	71	44	83	133
2:	Assist special student groups to successfully achieve in a secondary vocational program.										
2-a.	Percent of the disadvantaged persons (economically and/or educationally) enrolled will complete the secondary vocational program.	75	88	133	0	133	0	133	104	0	0
2-b	Percent of the handicapped persons (physical and/or mental) enrolled will successfully complete the secondary vocational program.	50	0	0	0	0	0	0	200	0	0

PROGRAM OBJECTIVES AND TARGET GOALS FOR CHILD CARE PROGRAMS

Objectives (N=33)	Target Goal (Percent)	A	B	C	D	E	F	G	H	I
2-c. Percent of the students enrolled will represent the sex minority in those programs traditionally considered sex-sterotyped.	25	0	0	0	0	0	0	0	0	0
2-d. Percent of the students classified in special student groups will rate their vocational program as satisfactorily meeting their education goals.	90	70	79	0	111	0	111	0	0	0
2-e. Percent of the special student group completions will indicate they would recommend their vocational program to other students.	90	83	111	0	111	0	111	36	0	0
3: Provide vocational education for secondary school youth in accordance with their occupational preparation.										
3-a. Percent of the students available for and having sought employment will be employed full-time in less than fifteen weeks after graduation.	65	95	68	38	28	12	37	20	35	153
3-b. Percent of the graduates available for and having sought employment in their specialization will be employed in their specialization in less than fifteen weeks after graduation.	30	27	0	0	0	0	0	0	0	0
3-c. Percent of the graduates available for employment will be employed in their specialization or in a position they considered related to their area in less than fifteen weeks after graduation.	40	78	15	25	45	20	0	18	38	125
3-d. Percent of the students responding on a follow-up study will indicate they are satisfied with their jobs.	60	83	167	83	167	167	167	83	167	167

PROGRAM OBJECTIVES AND TARGET GOALS FOR CHILD CARE PROGRAMS

Objectives (N=33)	Target Goals (Percent)	A	B	C	D	E	F	G	H	I
3-e. Percent of the students employed six (6) months after graduation will indicate that their skill preparation was adequate for their present job.	75	17	57	44	133	133	33	0	133	33
3-f. Percent of the gradustes will indicate they were adequately prepared to work with supervisors, co-workers and subordinates.	75	117	133	133	44	0	33	0	133	133
4: Provide leadership development activities for students enrolled in vocational programs through a youth organization functioning as an integral part of the vocational instruction										
4-a. Percent of the students enrolled in the vocational program will have taken an active part in (youth organication, i.e. FHA) activities for the school year.	60	31	105	0	132	100	0	38	76	133
4-b. Percent of youth organization participants will rate the activities as meeting their needs and interests.	75	133	133	0	53	117	0	133	133	66
5: Provide guidance and counseling services (career development) information appropriate to continue education or employment for students enrolled in vocational programs.										
5-a. Percent of the vocational students will have received career counseling and guidance services.	100	58	69	55	53	54	47	27	62	133
5-b. Percent of the students will have received career development information during the school year 1978-79.	75	23	92	40	32	41	39	36	51	100

PROGRAM OBJECTIVES AND TARGET GOALS FOR CHILD CARE PROGRAMS

	Objectives (N=33)	Target Goal (Percent)	A	B	C	D	E	F	G	H	I
5-c.	Percent of the students will indicate career guidance and counseling services as adequate after completion of their vocational program.	75	77	92	73	70	72	63	36	83	100
5-d.	Percent of the students receiving exploratory career information will rate the experience as having influence on their career choice.	50	26	62	42	42	54	52	48	76	133
6:	Provide vocational programs to fulfill the requirements of the labor markets and the employment community manpower needs.										
6-a.	Percent of the employers will value the vocational program as a source of trained manpower.	100	100	100	100	100	0	0	0	0	0
6-b.	Percent of the employers will indicate that the employees' vocational preparation was critical in the employment decision.	70	100	50	100	100	0	0	0	0	0
6-c.	Percent of the employers will rank the employees' skill and knowledge level at a minimum of fairly skilled or above.	60	100	100	100	0	0	0	0	0	0
6-d.	Percent of the employers will indicate job advancement is related to training received in the vocational education programs.	60	0	50	100	100	0	0	0	0	0
6-e.	Percent of the employers will rate the employees on the job maturity factors at a minimum mean of good or above.	60	100	100	100	100	0	0	0	0	0

PROGRAM OBJECTIVES AND TARGET GOALS FOR CHILD CARE PROGRAMS

Objectives (N=33)	Target Goal (Percent)	A	B	C	D	E	F	G	H	I
7: Encourage vocational graduates to continue their education after completion of their secondary program.										
7-a. Percent of students who complete the vocational program will be enrolled in advanced study programs.	10	80	60	200	0	10	0	0	0	0
7-b. Percent of students enrolled in advanced study programs will be in the same program specialty as thier secondary vocational program.	5	0	0	0	0	0	0	0	0	0
7-c. Percent of the students enrolled in advanced study programs will be in their specialization or programs which they considered related to their secondary vocational program.	7	0	0	142	0	0	0	0	0	0
7-d. Percent of the students enrolled in advanced study programs will rate their secondary vocational program as instrumental in their decision to continue their education.	10	100	0	750	0	0	0	0	0	0
7-e. Percent of the students enrolled in advanced study programs will indicate their vocational program prepared them for their pursuit of advanced study.	7	1428	0	1071	0	0	0	0	0	0

PROGRAM OBJECTIVES AND TARGET GOALS FOR COMMERCIAL FOODS PROGRAMS

	Objectives (N=33)	Target Goal (Percent)	A	B	C	D	E	F	G	H	I	J	K
1:	Aid students enrolled in vocational education to successfully complete a secondary occupational program.												
1-a.	Percent of the students will be enrolled in the secondary vocational program during the 1978-79 school year.	100	1	5	2	4	4	11	3	5	2	9	2
1-b.	Percent of the students remaining in the program for the entire year will complete the program.	100	100	53	87	92	75	86	80	41	81	73	85
1-c	Percent of student completions will have on-the-job occupational work experience.	100	100	100	100	100	100	100	100	100	100	100	100
1-d.	Percent less dropout rate will occur in the vocational program than the total dropout rate for the school.	25	30	8	4	34	6	12	17	17	4	8	6
1-e.	Percent of student completions will rate their program as satisfactorily meeting their educational goals.	60	83	58	103	111	73	87	83	133	52	68	83
1-f.	Percent of student completions would indicate their vocational program was a wise choice.	75	57	55	83	89	59	75	77	133	61	61	67
2:	Assist special student groups to successfully achieve in a secondary vocational program.												
2-a.	Percent of the disadvantaged persons (economically and/or educationally) enrolled will complete the secondary vocational program.	75	133	4	133	0	100	97	0	40	83	73	133
2-b	Percent of the handicapped persons (physical and/or mental) enrolled will successfully complete the secondary vocational program.	50	0	0	0	0	100	26	0	0	0	180	0

PROGRAM OBJECTIVES AND TARGET GOALS FOR COMMERCIAL FOODS PROGRAMS

Objectives (N=33)	Target Goal (Percent)	A	B	C	D	E	F	G	H	I	J	K
2-c. Percent of the students enrolled will represent the sex minority in those programs traditionally considered sex-sterotyped.	25	84	12	0	32	0	136	0	100	24	220	84
2-d. Percent of the students classified in special student groups will rate their vocational program as satisfactorily meeting their education goals.	90	56	60	111	0	111	92	0	37	29	46	0
2-e. Percent of the special student group completions will indicate they would recommend their vocational program to other students.	90	48	60	111	0	111	92	0	56	83	51	0
3: Provide vocational education for secondary school youth in accordance with their occupational preparation.												
3-a. Percent of the students available for and having sought employment will be employed full-time in less than fifteen weeks after graduation.	65	11	54	38	38	17	43	26	92	58	28	25
3-b. Percent of the graduates available for and having sought employment in their specialization will be employed in their specialization in less than fifteen weeks after graduation.	30	0	17	0	27	37	0	0	0	50	30	27
3-c. Percent of the graduates available for employment will be employed in their specialization or in a position they considered related to their area in less than fifteen weeks after graduation.	40	14	10	46	16	0	56	34	80	46	28	0
3-d. Percent of the students responding on a follow-up study will indicate they are satisfied with their jobs.	60	167	83	111	167	167	167	167	33	100	167	83

PROGRAM OBJECTIVES AND TARGET GOALS FOR COMMERCIAL FOODS PROGRAMS

	Objectives (N=33)	Target Goal (Percent)	A	B	C	D	E	F	G	H	I	J	K
3-e.	Percent of the students employed six (6) months after graduation will indicate that their skill preparation was adequate for their present job.	75	133	67	89	133	133	133	133	53	133	133	67
3-f.	Percent of the gradustes will indicate they were adequately prepared to work with supervisors, co-workers and subordinates.	75	133	110	133	133	133	133	133	80	133	133	67
4:	Provide leadership development activities for students enrolled in vocational programs through a youth organization functioning as an integral part of the vocational instruction.												
4-a.	Percent of the students enrolled in the vocational program will have taken an active part in (youth organication, i.e. FHA) activities for the school year.	60	46	30	78	13	42	57	88	95	28	1	48
4-b.	Percent of youth organization participants will rate the activities as meeting their needs and interests.	75	133	133	133	133	33	120	82	57	133	133	133
5:	Provide guidance and counseling services (career development) information appropriate to continue education or employment for students enrolled in vocational programs.												
5-a.	Percent of the vocational students will have received career counseling and guidance services.	100	36	29	69	67	33	52	58	80	46	32	50
5-b.	Percent of the students will have received career development information during the school year 1978-79.	75	11	16	51	44	44	69	23	40	11	30	67

PROGRAM OBJECTIVES AND TARGET GOALS FOR COMMERCIAL FOODS PROGRAMS

	Objectives (N=33)	Target Goal (Percent)	A	B	C	D	E	F	G	H	I	J	K
5-c.	Percent of the students will indicate career guidance and counseling services as adequate after completion of their vocational program.	75	67	39	83	89	44	69	77	106	61	43	67
5-d.	Percent of the students receiving exploratory career information will rate the experience as having influence on their career choice.	50	14	12	66	62	50	90	26	34	12	34	86
6:	Provide vocational programs to fulfill the requirements of the labor markets and the employment community manpower needs.												
6-a.	Percent of the employers will value the vocational program as a source of trained manpower.	100	100	0	0	0	0	100	100	0	50	100	0
6-b.	Percent of the employers will indicate that the employees' vocational preparation was critical in the employment decision.	70	25	0	0	0	0	100	0	0	100	50	0
6-c.	Percent of the employers will rank the employees' skill and knowledge level at a minimum of fairly skilled or above.	60	25	0	0	0	0	100	50	0	50	75	0
6-d.	Percent of the employers will indicate job advancement is related to training received in the vocational education programs.	60	50	0	0	0	0	0	50	0	50	75	0
6-e.	Percent of the employers will rate the employees on the job maturity factors at a minimum mean of good or above.	60	100	0	0	0	0	100	50	0	100	100	0

PROGRAM OBJECTIVES AND TARGET GOALS FOR COMMERCIAL FOODS PROGRAMS

	Objectives (N=33)	Target Goal (Percent)	A	B	C	D	E	F	G	H	I	J	K
7:	Encourage vocational graduates to continue their education after completion of their secondary program.												
7-a.	Percent of students who complete the vocational program will be enrolled in advanced study programs.	10	140	170	80	80	110	40	0	150	0	0	160
7-b.	Percent of students enrolled in advanced study programs will be in the same program specialty as thier secondary vocational program.	5	0	0	0	0	220	0	0	0	0	0	0
7-c.	Percent of the students enrolled in advanced study programs will be in their specialization or programs which they considered related to their secondary vocational program.	7	0	71	0	0	0	57	0	35	0	0	228
7-d.	Percent of the students enrolled in advanced study programs will rate their secondary vocational program as instrumental in their decision to continue their education.	10	500	660	0	1000	0	1000	0	950	0	0	1000
7-e.	Percent of the students enrolled in advanced study programs will indicate their vocational program prepared them for their pursuit of advanced study.	7	1400	471	0	1400	143	1430	0	1400	0	0	1428

APPENDIX C

SAMPLE COVER LETTERS

CONSENT FORM

QUESTIONNAIRES

PARTICIPANT CONSENT FORM

_____YES, you have my permission to use the information obtained from the enclosed questionnaire.

_____No, you do not have my permission to use the information obtained from the enclosed questionnarie.

Signature_____

Date _____

I need your help.

A study of graduates of programs in Occupational Child Care and Commercial Foods is being conducted with the help of your former teacher and myself, a doctoral student at the University of Tennessee. Your opinion concerning the training you received in your class will help us to improve future programs.

It should take you about ten minutes to complete the enclosed questionnaire if you wish to participate in this study. Your answers will be treated confidentially. No individual or school will be named in reporting the results of the study, and you may withdraw without prejudice at any time from the study.

Thanks for the important information you will be providing us. Please return as soon as possible in the enclosed, self-addressed, stamped envelope the questionnaire and the attached participant consent form.

Sincerely,

Lydia Carol Gabbard
P.O. Box 673
Midway, Kentucky 40347
606-846-4162

Your Former Teacher
Address
Phone

I still very much need your help.

On November 1, you were mailed a questionnaire. We need your evaluation of the training you received in Occupational Child Care or Commercial Foods to help us improve future programs. The information which you were asked to provide will be treated confidentially.

It should take you about ten minutes to complete the questionnaire. If you have not done so and you wish to participate in this study, please return the attached questionnaire as soon as possible. A return envelope, requiring no stamp, is enclosed for your convenience.

Thanks for the important information you will be providing for us.

Cordially,

Your Former Teacher
Local High School
Address
Phone

Lydia Carol Gabbard
Graduate Student
P.O. Box 673
Midway, Kentucky 40347
606-846-4162

Code No. _____

Students' Follow-up Program Rating Scale

This questionnaire is one portion of an evaluation of vocational education programs. Information you can provide will serve as an important basis for decisions regarding local school programs.

The information on this form will be used as a program class profile. Please note that your name does not appear on the questionnaire. This confidential data will not be reported as information on specific students, employers, or teachers. The code number at the top of the page will be used to record person returning the questionnaire.

INSTRUCTIONS: Please mark reponses to the following questions or statements. When you have completed the questionnaire, return it in the enclosed postage paid envelope.

THANK YOU FOR YOUR TIME AND THOUGHTS.

1. Were you enrolled in a vocational education program while in school?

   Yes . . . ☐ No . . . ☐

2. What type of vocational program:

   Agriculture . . . . . ☐
   Distributive Education . . . . . ☐
   Business . . . . . ☐
   Health . . . . . ☐
   Home Economics . . . . . ☐
   Trade & Industry . . . . . ☐

3. Has your address changed since leaving school?

   Yes . . . ☐ No . . . ☐

3a. If you answered "yes" above, where did you move?

   To a place in the same county . . . . . ☐
   To a different county (same state) . . . . . ☐
   To a different state . . . . . ☐

4. Since you left school, did you seek full-time employment? (35 or more hours per week)

   Yes . . . ☐ No . . . ☐

5. What is your present employment status?

   Employed: full-time (35 or more hours per week) . . . . . ☐
   Employed: part-time (less than 35 hours per week) . . . . . ☐
   Not Employed: looking for work . . . . . ☐
   Not Employed: not looking for work . . . . . ☐
   Attending school . . . . . ☐
   Married or getting married . . . . . ☐
   Military . . . . . ☐
   Other (explain) _____

6. Have you had a full-time job since leaving high school?

   Yes . . . ☐ No . . . ☐

Answer these questions if you are working full-time.

7. How long after leaving high school did you begin your first full-time job?

   No waiting period . . . . . ☐
   Less than 4 weeks . . . . . ☐
   4 to 8 weeks. . . . . ☐
   8 to 12 weeks . . . . . ☐
   12 to 15 weeks. . . . . ☐
   15 to 18 weeks. . . . . ☐
   18 to 24 weeks. . . . . ☐

8. Is your present job related to the vocational training you received?

   Same occupation . . . . . ☐
   Highly related . . . . . ☐
   Slightly related . . . . . ☐
   Totally unrelated . . . . . ☐

9. Did your first job require that you take a licensed examination?

   Yes . . . ☐ No . . . ☐

10. Did you pass the examination?

    Yes . . . ☐ No . . . ☐

If you are going to school, answer these questions.

11. Are you enrolled in advanced study?

    Yes . . . ☐ No . . . ☐

12. What is the relationship of your advanced study program to your high school vocational program?

    New program is in the same occupation . . . ☐
    New program is in a related occupation . . ☐
    New program is in an entirely different occupation . . . . . ☐

Rate the following items as they state your personal feelings or experiences. Check the blank according to whether you agree or disagree with the statement.

	Agree (3)	Don't Know (2)	Disagree (1)
13. I'm satisfied with the vocational training I received in high school as meeting my goals.	☐	☐	☐
14. I would recommend this vocational program to others.	☐	☐	☐
15. The vocational youth organization activities met my needs and interests.	☐	☐	☐
16. I feel that the career counseling and guidance services I received at school were adequate.	☐	☐	☐
17. The career information that I received during the school was influential in my career choice.	☐	☐	☐
Rate if working.			
18. I was adequately prepared for my present job by my vocational program.	☐	☐	☐
19. I was adequately trained to get along with others at work by my vocational program.	☐	☐	☐
20. I am satisfied with my present job.	☐	☐	☐
Rate if going to school.			
21. The vocational program that I completed was influential in my decision to take advanced studies.	☐	☐	☐
22. The vocational program that I completed prepared me to pursue advanced study.	☐	☐	☐

Dear Employer:

We are attempting to gain input from the employers of former vocational students in order that a relevant status be maintained in our instructional Home Economics programs of Occupational Child Care and Commercial Foods. Your answers to the enclosed questions will be most helpful when evaluating current programs and planning new ones.

Please indicate on the enclosed questionnaire your satisfaction with the employee _____.

This questionnaire contains no student-identifiable information. The code number in the upper right-hand corner contains information of the program in which the individual was enrolled. No part of the code contains student identifiers.

If you choose to participate in this study, remove this cover letter before returning the enclosed questionnaire. Please return this questionnaire by _____, in the enclosed, self-addressed, stamped envelope.

Your cooperation with this endeavor will be most sincerely appreciated by both the program teacher and myself.

Sincerely,

Lydia Carol Gabbard
Graduate Student
P.O. Box 673
Midway, Kentucky 40347

Program Instructor
Local High School
Address
Telephone

Code No. _____

Employers' Opinion on Vocational Training of Employees

Dear Employer:

This questionnaire was developed for you to provide information on the vocational training of an employee in your firm. Your response will serve as a basis for decisions regarding local vocational program development and operation. This confidential data will not be reported as information on specific students, employers, or teachers.

Please provide the appropriate information about the designated employee. When you have completed the questionnaire, return it in the enclosed postage paid envelope.

* *

1. What is the title of the position he/she holds within the firm? (example: secretary, machine operator, cashier, etc.)

   Job title: _____

2. When hiring the person, did you consider his/her vocational training at the high school level as critical in your decision?

   Yes . . . . . ☐ No . . . . . ☐ Undecided . . . . . ☐

3. Please rate the person's occupational skills at the time the person was employed.

   No skill and knowledge . . . . . ☐
   Limited skill and knowledge . . . . . ☐
   Fair skill and knowledge . . . . . ☐
   Exceptional skill and knowledge . . . . . ☐

4. Do you think that the employee's skill or knowledge attained through the vocational training program has allowed the employee to advance in his/her job?

   Yes . . . . . ☐ No . . . . . ☐ Undecided . . . . . ☐

5. Do you look to the vocational education program as a good source of trained personnel?

   Yes . . . . . ☐ No . . . . . ☐ Undecided . . . . . ☐

6. Please rate the employee in the following factors: (check each of the items on the adjacent scale)

Factors	Poor	Fair	Good	Very Good	Excellent
A) Cooperativeness with supervisor					
B) Cooperativeness with other employees					
C) Interest in the job					
D) Attendance and punctuality					
E) Productivity					

VITA

Lydia Carol Moore Gabbard was born November 10, 1949, and grew up in Booneville, Kentucky. She received a B.S. degree in Vocational Home Economics from Eastern Kentucky University, Richmond, Kentucky, in May 1971, and a M.S. degree in Education with an emphasis in Nutrition from the same University in June 1973. In December 1981, Ms. Gabbard received an Ed.D. degree in Vocational-Technical Education from The University of Tennessee, Knoxville.

Ms. Gabbard has held secondary home economics teaching positions at Jackson County High School, McKee, Kentucky; and Berea Community High School, Berea, Kentucky. As part of her Master's work, Ms. Gabbard served as a graduate assistant for the directorship of the Home Management Residence of Eastern Kentucky University. She has served as a public health nutritionist in Eastern Kentucky. She was a graduate assistant at the University of Tennessee, Department of Vocational-Technical Education. She is presently employed in Lexington, Kentucky as a Vocational Program Coordinator. Her present duties entail working with both state and locally-operated vocational programs.

Ms. Gabbard lives in Midway, Kentucky with her husband, Earl, and daughter, Alicia Carrie.