MCCASKILL, KENNETH NEIL. Adapting a Programming Model for Cooperative Extension Service Programs Delivered Via Distance Education: A National Delphi Study. (Under the direction of JOHN M. PETTITT and EDGAR JOHN BOONE.)

The purpose of this study was to adapt a model for planning, designing and implementing, and evaluating and accounting for nonformal distance education programs in the Cooperative Extension Service. Zetterburg’s five steps were used as a guide in framing this research. The conceptual programming model was adapted through a review of the literature, experts’ opinions and advice, and the researcher’s experience with nonformal distance education in the Cooperative Extension Service.

Data were collected from a panel of experts during two rounds of questionnaires using a modified Delphi technique. Round one was conducted as a web-based instrument and the follow-up round was conducted by electronic mail. Forty-eight panelists were selected representing the four national Extension regions, rural, urbanizing, and urban states, and the Extension Agriculture, 4-H, Family and Consumer Sciences, and Community Resource Development program areas. Twenty-seven participated in the initial round, a fifty-six percent return rate, and twenty-three participated in round two.

The questionnaire contained forty-six processual tasks which were placed on a five-point Likert-type scale. A processual task was considered acceptable when it met both critical and consensual criteria in the second round. Those processual tasks that had a mean score of 3.5 or higher as rated by the panel of experts were considered critical for programming in Extension nonformal distance education programs. Those processual tasks that were rated by 55% or more of the experts as usually or always important (4 and
5) were used to determine consensus. Only those processual tasks that 55% or more of the experts rated four and five were considered for inclusion in the adapted model. The final panel of experts accepted twenty-one of the forty-six processual tasks and rejected twenty-five.

The major findings of this study led to these conclusions: (1) The conceptual programming model provides a framework that guides the programming efforts of the Cooperative Extension Services administration, faculty, and field personnel; (2) The mission and goals of the organization need to be reexamined to determine whether they need to be revised in order to accent the use of distance education as a delivery mode for planned programs; (3) Extension needs to have a dynamic training program that focuses on helping keep state and field faculty abreast of the emerging delivery technologies and the use of the conceptual programming model; (4) Distance education delivery requires the involvement of audiences and other relevant stakeholders that may not have been involved with Extension programs in the past; (5) Cooperative Extension must commit and make available the resources for support of programs delivered via the distance mode.
ADAPTING A PROGRAMMING MODEL FOR COOPERATIVE EXTENSION SERVICE PROGRAMS DELIVERED VIA DISTANCE EDUCATION:
A NATIONAL DELPHI STUDY

BY
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A dissertation submitted to the Graduate Faculty of
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APPROVED BY:

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Co-Chairman of the Advisory Committee  Co-Chairman of the Advisory Committee
BIOGRAPHY

Kenneth Neil McCaskill was born in Pinehurst, North Carolina on December 26, 1955, son of John Henry and Sarah Catherine McCaskill. He is a graduate of Pinecrest High School and received his B.S. in Agronomy from North Carolina State University in 1978. Selected to receive a Philip Morris Fellowship he returned to North Carolina State University where he received his Master of Crop Science degree in 1988.

His career with the Cooperative Extension Service began in 1978 when he was appointed Assistant Agriculture Extension Agent in Macon County North Carolina. Kenneth moved to Jackson County in 1982 as Associate Extension Agent, Agriculture where he was promoted to County Director in 1988. He transferred to Macon County as County Extension Director in 1993 and assumed Administrative duties in Clay County in 1998. Currently he is serving as County Director in these two counties and Area Burley Tobacco Coordinator for the far west Region of North Carolina.
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CHAPTER 1

Introduction

Background of the Problem and Need for Resolution

Hayes (1990) discusses the growing need for education to meet the demands of a rapidly changing workplace and broader societal changes. This critical need is resulting in greater emphasis on providing education to people in their homes and workplaces. Distance education has become more important as a delivery mode for providing learning opportunities in our modern society. Saba and Twitchell (1988) describe the purpose of distance education as follows: to eliminate time and distance constraints in the delivery and utilization of educational services, to provide access to educational services to those unable to participate in conventional learning, and to provide continuing education to adults who wish to acquire new skills and knowledge. The society in which we live has become an audio, visual, and computer world where new options for teaching are evolving and new light is being shed on the learning process by research. Wolcott (1993) points out that planning instruction for non-traditional settings and non-traditional learners are uncharted territory. She further indicates that there is little information about how teachers design instruction for learning situations that represent a significant change from the traditional instructional settings to which they are accustomed. Donaldson (1990) indicates that educators’ selection of delivery methodologies should not be limited to past patterns or to traditional delivery systems.

With the rapid development of interactive television networks and computer services, in addition to other more traditional distance educational opportunities, there is
increased interest in the expansion of distance education. This increasing interest in this rapidly expanding approach to education has led to the need to adapt a programming model for nonformal education that will accent the use of distance education delivery of planned programs. This model could be extremely useful in helping educators discover how to incorporate distance education in planning, designing and implementing, and evaluating and accounting for planned programs.

A review of the literature shows that scholars and practitioners of distance education are at odds over the standards and strategies for planning, designing and implementing, and evaluating programs that use distance education methodologies in delivering planned programs. A number of studies have indicated that distance education delivery requires a more rigorous and systematic approach to development (Willis, 1993). Others indicated a more limited role for instructors in designing distance delivered instruction than in the design of instruction to be delivered using traditional delivery methods. Downing (1984) noted potential problems in removing the instructor from the design and development process such as loss of ownership for the program.

Planned programs delivered via the distance education mode, where the learners participate voluntarily and are not seeking credentials or degrees, may increase the number of participating learners. Further review of the literature indicates that there are few studies on the development of new programming models or the adaptation and validation of current programming models that accent the use of distance education methodologies in delivery of planned programs.
Purpose of Study

This research focuses on adapting a conceptual programming model that includes planning, designing and implementing, and evaluating and accounting for adult education programs that incorporate the use of distance education as a delivery mode. In order to accomplish this purpose, Boone’s conceptual programming model became the object of the inquiry that guided this dissertation. The conceptual programming model is widely used in the Cooperative Extension Service. Developed and validated during the period of 1960-85, the conceptual programming model references distance education, but does not highlight the distance education mode as a major delivery strategy for planned programs.

Statement of Problem

The Cooperative Extension Service is one of the major providers of education for adults in the United States that focuses on the nonformal context. Extension was established in the early 1900's, and its primary mission was, and continues to be that of disseminating practical research based information generated in Land Grant Universities, to the people residing in each of the 50 states to enable them to improve the quality of their lives. Extension has used distance education as a delivery mode from its outset, beginning with flat media (newsletters, pamphlets and written correspondence materials) and then moving into audio, video, and computer based delivery systems as these technologies became available. Although these programs, delivered via the distance mode, have benefitted millions of learners they have evolved through trial and error and the programming experiences of Extension educators using traditional delivery methods. At this time, limited investigations have been focused on developing and/or adapting existing
models for use by Extension educators that emphasize distance education as an important part of the total programming process.

Because of the increasing central role that instructional technology is playing in the packaging and delivery of planned programs to the total community, there is a critical need to assess and modify programming processes used by organizations such as the Cooperative Extension Service. The conceptual programming model that is the most widely used programming process by the 50 state Cooperative Extension Services needs to be adapted to include the philosophy and concepts of distance education as integral to its planning, design and implementation, and evaluation and accountability subprocesses. The adapted model could become the motivating and guiding focus for increasing Extensionists’ understanding and use of distance education technologies to make their programs and expertise accessible to larger numbers of people.

Limitations of the Study

The limitations of this study are:

1. The conceptual programming model was adapted through a consensus of opinions of a selected panel of experts in nonformal distance education within the Land Grant University System. Since experts from all fields of nonformal distance education were not involved in adapting the conceptual programming model, its applicability may be limited.

2. A self administered mailed survey instrument was used to develop a consensus of opinion among the panel of experts. Common problems associated with a mailed instrument are:
(a) Respondent Bias - Inaccurate responses may be given due to the respondent's attitudes, expectations, and feelings toward a given topic.

(b) Misinterpretation of survey questions may occur due to ambiguity in their construction. Although a similar instrument has been used in prior research of formal distance education and the instrument had been pretested through the use of a preliminary panel of experts, there is always the possibility that misinterpretation of some questions may occur.

3. Because the final panel of experts was drawn from selected state Cooperative Extension Services personnel responsible for programming in their respective state, they may not have been representative of the 50 state Cooperative Extension Services.

4. It is conceivable that the final panel selected, because of their position and responsibilities for programming in their respective states, may not have possessed the presumed level of knowledge about the conceptual programming model and distance education necessary to provide reliable and valid responses.

5. The Delphi technique focuses on consensus. The process has no respondent/respondent interaction and therefore differences of opinion among the respondents may have been unintentionally subdued. This lack of personal interaction may have resulted in responses that were not well thought out.

**Definition of Terms**

The following terms are defined to clarify their meanings in terms of this study:
**Conventional Education**: The learner and the instructor are present in the same place and time, usually in a classroom or laboratory setting. This form of education is also referred to as traditional education.

**Distance Education**: All kinds of education where the learner and the instructor are separated in place, or time, or both. Methods of communication to carry out the educational transaction include print, broadcasting, telecommunication media, correspondence instruction through the mail, audio recordings, video recordings, computer, and various combinations or variations of these methods (Moore, 1989; Barker, Frisbe, and Patrick, 1989).

**Evaluation**: The systematic application of social research procedures for assessing the conceptualization and design, implementation, and utility of social intervention programs (Rossi & Freeman, 1993).

**Adult Education**: Education of adults as defined in Brookfield (1986, p.5) “as courses and other educational activities, organized by a teacher or sponsoring agency, and taken by persons beyond compulsory school age”. This encompasses the vast majority of adult learning that takes place in the community. Learning may be deliberate or fortuitous, but is always personally meaningful to the adult learner. The learner has complete control over what he or she will learn and how and where the learning will occur (Galbraith, 1990, p.9). Opportunities outside of a traditional educational setting through which individuals can acquire norms, values, information, knowledge, expectations, skills, and can learn roles. (Charner & Rolzinski, 1987, p.12).
**Linkage:** The “blending of two or more systems to achieve a common purpose” (Boone, 1985, p.15).

**Model:** “A symbolic representation of the various aspects of a complex event or situation, and their interrelationships” (Lippitt, 1973, p.2). In educational programming a model is “A representation of a particular situation, for use in structuring an attack on new questions and old questions that still need satisfactory answers or solutions” (Boone, 1985, p.49).

**Model-Building:** “The process of putting together symbols according to certain rules to form a structure which corresponds to a real-world system under study” (Lippitt, 1973, p.30). Getzels (1968) lists the following criteria for developing a conceptual model; (a) the model must provide a set of integrated concepts and relations capable not only of answering questions already asked, but posing questions that still need to be asked, (b) the concepts and relations must be operational in that they give direction to understanding and simultaneously provide blueprints for investigation, and (c) the model must be capable of handling as many of the commonplace or familiar issues as possible, within a single set of concepts and relations.

**Nonformal Adult Education:** Educational settings in which learners participate voluntarily and are not specifically seeking credentials or degrees. The adult learner maintains some degree of control over their learning needs as well as when, where, and how these needs can be satisfied (Galbraith, 1990, p.9).
Panel of Experts: A group of selected professionals that because of position or responsibility are presumed to be knowledgeable about nonformal distance education and programming in the Cooperative Extension Service. Reeves and Jaunch (1978) defined "expert" as anyone who could contribute relevant inputs.

Program: A plan of activity that is carefully planned and carried out to achieve specific goals and objectives.

Programming: The individual and collaborative efforts of the adult education organization, educators, and learners in planning, designing, implementing, evaluating, and accounting for educational programs (Boone, 1985).

Program Evaluation: Judgements made about planned programs based on established criteria and known, observable evidence (Boone, 1985).

Stakeholders: “Individuals or organizations directly or indirectly affected by the implementation and results of social programs” (Rossi & Freeman, 1993, p.2).

System: “An entity, conceptual or physical, that consists of interrelated parts” (Boone, 1985, p.16).

Validation: When an item in the model meets the critical and consensual criteria (Mohdnor, 1995, p.18).
CHAPTER 2

Conceptual Framework and Review of Literature Related to the Model Adaptation and Building Process in Nonformal Distance Education

To adapt an existing programming model in adult education that will accent and include a focus on distance education, several concepts were used to provide a rationale and framework for this inquiry. These concepts included; (a) model-building, (b) problem solving, (c) programming, (d) program, (e) distance education, and (f) systems theory. The first part of this chapter defines each of these concepts. The second part of this chapter presents the conceptual frame formulated to guide the study. The third section is a review of related literature. The final section includes the research questions that are the object of the dissertation research.

**Concepts**

*Model-building*

The concept of model building is important to understanding what constitutes a model. O’Sullivan and Rassel (1989, p.2) defined a model as a “representation of reality that delineates certain aspects of the real world as being relevant to the problem under investigation and makes explicit the relationships among these aspects.” Webster (1970, p.913) defines a model as; “a preliminary representation of something, serving as the plan from which the final, usually larger, object is to be constructed.”

Lippitt (1973, p.2) described a model as “a representation of the aspects of a complex situation and their interrelationships.” He indicates that three main characteristics
should be contained within a change model; (a) it should clearly define the target of the change and the goal, (b) it should be simple and easily understood and facilitate communication between the parties involved in the change situation, and (c) it should be useful as a guide for those in real life situations to devise a course of action. An educational model, such as the conceptual programming model, should be intellectually constructed to represent the relevant properties of a chosen aspect of reality and also allow one to understand the relevant aspects of a complex situation without having to deal with all of the minute details of the situation.

Stogdill (1970) indicated that we cannot adequately claim to understand a set of events until we have acquired a theory or model that adequately accounts for the operational and structural characteristics of the system being observed. He goes on to outline skills that a student of model building needs in order to become proficient at describing these characteristics. He states that the student must be able to observe and analyze a system of real events in order to isolate and determine the variables operating within the system. He must be able to define in the proper terms each variable or dimension so that others can identify the exact variable or dimension described, and the model builder must have skills at perceiving or determining the relationships between the various dimensions. Stogdill (1970) indicates that not only the structural components of the system need to be identified, but operational characteristics must also be identified as well. This set of defined concepts as well as statements delineating the relationship between the concepts become the model builder’s conceptualization of the model of the system.
The best way to learn the model building process is by actually building models according to Lave and March (1975). They suggest that the model builder use the following procedures:

(a) observe facts, (b) look at the facts as though they were the end result of some unknown process or model, then speculate about processes that might have produced such a result, (c) deduce other results (implications / consequences / predictions) from the model, (d) ask yourself whether these other implications are true and produce new models if necessary (Lave & March 1975, pp.19-20).

Lave and March (1975) go on to purport that in order to evaluate a model it must be testable. They indicate that models should make assertions that can be either true or false and that good models should be simple, produce a number of predictions per assumption, and also produce some interesting implications that are surprising and are not immediately obvious from those assumptions.

Problem Solving

In order to be successful in constructing a model, utilizing the procedures described by Lave and March (1975), a structure helping to organize and guide the inquiry is required. Zetterburg (1962) provides five steps of problem solving which are useful in the process of adapting a current model and model building and can serve as a guide for the process. These steps include; (a) making an exploratory inquiry, (b) achieving a scholarly understanding, (c) scholarly confrontation, (d) calculation of solutions and, (e) receiving practical advice. Each of these steps in the adapted process is discussed in the next section.
Making an exploratory inquiry

The first step in this process is making an exploratory inquiry. The researcher must discover the details relating to the process or problem under investigation by a thorough study of relevant literature, talking with persons who are actively engaged in the program or process, and actually observing the program or process in operation. Exploratory inquiry also may include a research project which aims to identify the structural components of the program, operational characteristics of the program, the participants in the program, as well as the relationships among and between these identifiable elements. This step was used in order to identify those elements that related to the problem and to observe facts as suggested by Lave and March (1975). During this step the researcher collects as much information as possible concerning the program or process.

Achieving a scholarly understanding

Lave and March (1975) suggested that these facts be examined as though they were the end result of some unknown process or model, and then speculate about the processes that might have produced such a result. Zetterburg’s second step, achieving a scholarly understanding, is well suited to guide this phase of the model adaptation and building process. In order to achieve scholarly understanding the researcher must translate the problem or process into scientific terms and then formulate corresponding theoretical problems. All of the information that has been gathered during the exploratory inquiry conducted earlier needs to be analyzed to help the researcher understand the complexity of the problem or process. During this analytical phase, the process of gathering information should be ongoing as current related literature is reviewed and dialogue with various
stakeholders involved with the process or problem under investigation continues. The researcher should continually seek clarification of any aspects or information relating to the process or problem that is not clear from knowledgeable individuals. During this stage of the investigation, the researcher should be able to grasp the general concept of the problem or process for which the model is to be developed/adapted and also should be able to identify key variables.

**Scholarly confrontation**

Scholarly confrontation, which is related in general terms to scientific discipline, allows the researcher to clarify his understanding of the problem or process. The processual tasks that are critical to the model can be drawn from the first two steps, making an exploratory inquiry and achieving a scholarly understanding, of the process where information is collected, analyzed, and organized utilizing theories. After this has been done, these processual tasks are tested by examining them in a new and different way. One method that can accomplish this is to present those processual tasks identified for the adapted model to a panel of selected experts in order to obtain their input and opinions. This panel of experts can question, argue, reject, or make any necessary changes or adjustments to the processual tasks or to the adapted model.

**Calculation of solutions**

During this phase the adapted model is refined based on the feedback and suggestions received from the panel of experts during scholarly confrontation. This step involves restatement of the elements/processual tasks, addition, deletion, or combination of various elements/processual tasks, reorganization of content, and clarification language.
This step in the model adaptation/building process also helps to deduce other results, implications, consequences, and predictions as suggested by Lave and March (1975) as the third procedure useful to the model builder. Once these modifications and adjustments are made to the proposed solution, the next step is to present the solution or the tentative model in this case to the final panel of experts or relevant parties for practical advice.

Receiving practical advice

The fifth and final step of the model adaptation/building process is receiving practical advice. The researcher receives advice from the final panel of experts on how to proceed and on what complications or consequences might occur. During this phase the researcher makes changes, additions, deletions, and corrections to the model. This fifth and final step accomplishes the last procedure suggested by Lave and March (1975), that of examining the implications and producing new models when necessary.

In summary, a model is a simplified representation of some more complex phenomena. The model, such as the conceptual programming model, consists of the critical processual tasks and ideas gained from review of literature, observation of the process or phenomena under investigation, the researchers experience, and dialogue with scholars and professionals in the field of study. The elements/processual tasks in the model are arranged in a concise and logical order which allows one to understand some complex phenomena with little difficulty. Validation of a model can be achieved by several methods such as applying the model to a real-life situation or acceptance by experts in the field of study. These experts can confirm that the model actually contains the elements/processual tasks that are critical to the phenomena under investigation and
can be applied in real-life situations to achieve the desired goals. These experts can also confirm that the model is useful under a wide range of situations.

This model building process as described by Lave and March (1975) and the steps proposed by Zetterburg (1962) are critical to adapting the conceptual programming model to accent and include distance education as a part of its three subprocesses; planning, design and implementation, and evaluation and accountability. The adapted model resulting from this inquiry will serve as a guide accenting the use of distance education concepts and methodology in the planning and implementation of planned programs that target learner systems.

*Programming*

The second concept related to this inquiry is programming. According to Boone (1985) programming includes the individual and collaborative efforts of the adult education organization, the adult educators, and the learners in planning, designing and implementing, and evaluating and accounting for planned educational programs. He goes on to state that programming is a proactive process that is futuristic. It constitutes a system that links the adult education organization, and the learner groups and systems in a collaborative process to identify learning needs of the learner groups and systems, analyze and assess identified needs, design, market, and implement educational programs which address those needs, and to determine the extent to which the program has met those identified needs through the collection and reporting of evidence of program impacts.

Burnham (1988) and Albrecht and Bardsley (1993) report planning patterns that are used in programming or instructional development that are products of community
involvement and collaboration among planners, learners, and instructors. Steps in programming include; identifying needs or problems, originating program ideas and establishing objectives, designing programs, ensuring participation, securing resources, and evaluating and revising programs. Albrecht and Bardsley (1993) also indicate that programming provides a process and framework for systematically planning, developing, and adapting instruction based on identifiable learner needs and content requirements. This process is essential in distance education where the instructor and learners may share limited common background and typically have minimal face to face contact. Content may also have to be considered more closely as some content areas lend themselves to distance delivery more readily, such as those which require little or no laboratory or hands on motor skill type activity, while others that do require hands on or laboratory activity may require more extensive adaptation.

Boyle (1981) describes program development as a deliberate series of actions and decisions which involve; the development of an organizational structure for analyzing, interpreting, and making decisions about problems or needs that should be changed or improved, the study and analysis of the community and its people, establishment of priorities relating to the identified problems or needs, identified outcomes to be attained by the program with people and communities, developing a program design which includes appropriate learning experiences, implementation of a plan of action that provides those learning experiences, development of appropriate accountability approaches, and communication of the value of the program to stakeholders.
Willis (1993) in his description of the instructional development process for distance education, emphasizes this same general process but, includes an additional stage which he calls revision. He used the earlier evaluation stage, consisting of both formative evaluation and summative evaluation as a spring board for this stage. Formative evaluation can be used according to Eastmond (1994) to revise the program as the course is being developed and implemented, while the summative evaluation provides a data base for program revision and future planning.

From the writings of these authors a few of the common essential features of the programming process can be deduced. These features included; (a) programming directed toward specific changes in behavior of a learner, learner group, or system based on identified needs or problems, (b) programming is a sequential set of deliberate and systematic steps designed by educators or specialists to achieve the specified changes in behavior, and (c) evaluation and demonstrating accountability to the various stakeholders are an integral part of the programming process.

Boone’s (1985) conceptualization of the programming process includes three interrelated and connected subprocesses; (a) planning, (b) design and implementation, and (c) evaluation and accountability. To understand how to adapt these subprocesses to accent distance education it is important examine the subprocesses.

Planning

Planning is defined by Boone (1985, p.82) as “a rational, continuing sequence of precise educational activities carried out by adult educators, operating from an organizational base, through which the organization establishes and maintains linkage
with learners and their leaders in collaborative identification, assessment, and analysis of their educational needs.” He identifies two distinct dimensions of this stage of the programming process that are encompassed within this subprocess. These are the organization and its renewal process and linking the organization to its publics.

Boone (1985) asserts that organizational renewal requires that the organization be continually involved in reexamining the needs of its publics and its own function, structure, and processes as related to its mission, philosophy, and objectives. The adult education organization and its target publics must be viewed as dynamic and changing. Reexaminations and adjustments must continually be made in order to keep its functions, structure, and programs relevant to its publics. To accomplish this end, the educator must understand and be committed to the mission, or the parameters within which the organization is to function, and the philosophy, or belief that people adjust to change more easily in a democratic environment in which self-expression, self-direction, and self-improvement is supported and encouraged. Guided by its mission and goals the adult education organization engages in a continuing scan of its external environment to stay abreast of social, economic, political, and technological forces that are operative in the environment and to identify and maintain linkages with its publics. The goal is to involve its publics in collaborative needs identification and analysis.

Design and implementation

The second subprocess of the conceptual programming process is design and implementation. It is at this stage that the adult educator translates the information gained in the planning subprocess, as to the identified and analyzed learning needs of the target
publics, into meaningful and functional designs and devises effective instructional strategies for their implementation. Boone (1985, p.130) describes three interrelated dimensions; “(a) the planned program, (b) plans of action, and (c) action strategies for implementing plans of action and the planned program.” Boone (1985, pp.130-131) describes these dimensions as follows:

The planned program is a master prospectus or plan for change toward which adult educators focus their efforts. The planned program consists of; (a) a statement of macro needs, (b) a statement of macro objectives that are keyed to the macro needs, (c) specification of general educational strategies for achieving the macro objectives, and (d) specification of macro outcomes of the planned program.

Plans of action, which are short-range in nature and are logically sequenced, include specific teaching-learning strategies designed to guide the adult educator in fulfilling learners’ needs and attaining the objectives contained in the long range planned program.

Implementation of a specific plan of action entails action strategies in which the adult educator engages to assure that the plan is carried through to successful completion. These action strategies are; (a) marketing, (b) procuring, developing, and using the necessary, available resources, both human and material, (c) monitoring ongoing teaching-learning transactions, (d) reinforcing learners and teachers, and (e) using feedback to evaluate and, if needed, to revise teaching strategies or learner experiences, or both, to attain maximum behavioral change in the learners.
Boone (1985) indicates that the adult educator at this stage must be creative. Decisions are made about learning strategies to be used in delivering programs. Areas of particular concern in using distance education to deliver programs would be specifying constraints (i.e., limitations), exploring alternative solutions, selecting and implementing the “best” solution, and designing, developing, and implementing this instruction. Decisions about the use of distance education methodologies in delivering instruction as a part of the planned program and subsequent plans of action are very critical at this stage of programming.

_Evaluation and accountability_

The final stage and subprocess in the programming process identified is evaluation and accountability. In order to function effectively and to remain relevant to the target publics, the deliverers of nonformal programs delivered via the distance mode, such as Cooperative Extension, must continuously engage in an active evaluation and accountability process. Through active evaluation, both formative and summative, the adult educator can make revisions in delivery strategies in order to increase effectiveness of current programs, determine the effectiveness of completed programs, and assessing the outcomes achieved in relation to the defined goals of the planned program. This stage can also be used to determine if available resources are being used efficiently, and to provide data on which to base revisions in future program offerings. The information gained and the data collected on efficiency, effectiveness, and the extent to which the program has achieved the desired outcomes can also be utilized in accounting to the target publics, the funders, and the various stakeholders of the programs delivered via the distance mode.
According to Boone (1985, p.172), evaluation should answer questions such as “how program inputs, context, and processes relate to program outputs; how efficient a program is; how suitable it is; and its overall importance.” In order to be useful evaluation must be carried on throughout the implementation of the total programming process. These evaluation and accountability findings can then be used to make program revisions during the current program as well as in future programs. Also, the findings may be utilized in the organization renewal process and for communicating the value and worth of the program to various stakeholders. This final stage, evaluation, was utilized by the investigator to organize and structure processual tasks identified and included in the final section of the inquiry.

In summary, the nonformal distance education programming process is made up of three essential interrelated subprocesses which include; planning, design and implementation, and evaluation and accountability. Adult educators engaged in distance education need to review the organizational context from within which they function, establish linkages with various stakeholders and learner groups, and systematically identify and analyze the target group’s needs. These analyzed needs should be translated into hierarchical needs and objectives, sequenced into incremental plans of action, and then formulated into educational strategies for implementation. Evaluation and accountability activities should be carried on throughout the programming process. Data collected can be used to revise current and future programming, for organizational renewal purposes, as well as to account to the various stakeholder groups, parent organization, and relevant governance body.
Program

The most basic definition of program is a plan or procedure for dealing with some matter. This definition leads to the conclusion that the matter has been identified and it is to be purposefully dealt with, a procedure or orderly response has been devised, and when followed through, a resolution or end will be reached. Verner (1964) discussed educational programs in terms of a series of learning experiences designed to achieve, in a predetermined period of time, certain educational objectives. Brookfield (1986), in his review of the concept of program, indicated that educational programs have these same three main features; purpose, order, and finiteness. First, a program has purpose in that it is designed in such a manner as to bring about a specific change in learner behavior. Second, a program has order in that the planned learner activities are sequenced so that they are directional leading toward the behavioral change or program objectives. Third, a program has finiteness in that it is coordinated and organized by educators in such a way that it has a clearly identifiable beginning and ending point.

According to Boyle (1981) a program is made up of all of the programming activities implemented by the learner and the educator. Boyle and Jahns (1970) had earlier indicated that some of these activities were specifically instructional while others were directed primarily toward maintaining the viability of the providing agency.

Many agencies and organizations offer a wide variety of programs that are fully or partially delivered via the distance mode. Some of these are certificate, diploma, or degree programs while others are short courses that meet the need of specific target audiences which may or may not carry academic credit, and still others are nonformal programs
which deliver learning activities that are primarily designed to provide learning activities that carry no academic credit.

Although many programs delivered via the distance mode are described in the literature in terms of the technology or a communication channel utilized to bring about the teaching learning transaction, the concept of program is much broader. Brookfield (1986) described the educational program in terms of all of the programming activities that took place in achieving a particular educational objective. This included such diverse activities as survey research, needs identification, conceptual analysis, committee management, prioritizing tasks, instructional design, classroom management, counseling, budgeting, administration, evaluation, public relations, and staff training. The technology is seen as simply the channel for providing the instructor-learner, content-learner, and learner-learner interaction within the program.

The primary purpose of programs delivered via the distance mode are to provide learning activities and deliver educational programs, which are based on identified learner needs, in such a manner as to overcome barriers such as time and place. These programs may use a combination of delivery technologies such as printed materials, interactive television, computer communication, radio, and others as communication channels for the program delivery. Preparation and instructor training in the use of these media channels to effectively deliver the program should be provided for in the programming process.

Distance Education

Organizations that deliver nonformal distance education do so in order to accomplish goals which should be formulated based on the mission and philosophy of the
institution. The institutional objectives of these organizations include; (a) to provide nonformal education which is relevant and easily accessible, (b) to meet the educational needs of the individual and the community within the institution’s service area, (c) to bring about change in a target learner’s knowledge, attitudes, skills, and aspirations, (d) to provide nonformal education to learners at convenient times and locations, and (e) to extend the educational reach of the institution. The distance delivery mode is especially suited to accomplishment of these goals.

Since by definition the teacher and learner involved in programs delivered via the distance mode are separated in time and space or both, the teaching-learning transaction must be carried out utilizing various media and communication technology. Collaboration between the instructors, who know the subject matter, instructional designers, and media and technology specialists are essential for production of quality programs delivered via the distance mode. The content of the program may be delivered through surface or electronic mailings, interactive television, communication networks, computers, or several of these media in combination. This change in delivery system merits considerable consideration in the planning of nonformal programs delivered via the distance mode. Moore (1989) suggests that distance education is no longer an independent, isolated form of learning but, instead, begins to approach the interactive ideal of an educational experience and is well suited to the achievement of the goals and objectives of the deliverers of nonformal education.

Garrison (1990) has shown that interaction increases the learner’s motivation and the quality of the learning experience. Moore (1989) suggests three types of interaction
that the distance educator must consider. These types of interaction are described by Moore (1989) as; learner-content, learner-instructor, and learner-learner interaction.

Some learning activities are solely learner-content interactive. These are one way communications that are intended to help distance learners in their study of the subject. Experts in subject matter areas, sometimes with the assistance of an instructional designer, prepare materials that can be used in a self-directed learning activity and no other professional teaching expertise is provided.

Another type of interaction that Moore (1989) discusses is between the learner and instructor. This learner-instructor interaction is considered essential by many educators and desirable by many learners. This type of interaction minimizes the ambiguities, misconceptions, and frustrations encountered by many learners in understanding certain materials and concepts presented during instruction by allowing learners to communicate with instructors for help. Moore goes on to point out that interaction with content alone, no matter how well done, leaves that learner vulnerable at the point of application. According to Moore (1989, p.4) the learner may not know “enough about the subject to be sure that they are; (a) applying it correctly, (b) applying it intensively or extensively as possible or desirable, or (c) aware of all the potential areas of application.”

The third form of interaction, learner-learner interaction, will be the challenge to distance educators in their planning and practice according to Moore (1989). This is inter-learner interaction that takes place between one learner and other learners, whether alone or in group settings, with or without the presence of a real-time instructor. This interaction is sometimes an extremely valuable learning resource and is sometimes essential. A
program in which this interaction might be essential could be, for example, when teaching skills in group process or teamwork.

In order to provide for these three types of learner interactions, the deliverer of nonformal education must plan for the use of appropriate media and communication technology to deliver learning activities. This could encompass, with some programs, written materials and instructor feedback through surface mail. In other situations, and with varied subject matter, it could occur through the use of more sophisticated technology such as interactive television, computer conferencing, electronic mail, or a combination of several of these communication technologies.

Moore (1989a) indicates that the main weakness of many programs delivered via the distance mode are their commitment to utilize only one type of communication medium. Whether this is print, radio, interactive television, or another medium, it is probable that only one type of interaction is permitted or done well. Distance educators should become familiar with the types of media and, through collaborative planning efforts with media specialists, select the appropriate combinations of media to enhance the teaching-learning process.

Most of the participants in nonformal distance learning programs are adults. It is important for the deliverers of these programs as educators to know the characteristics of these adult learners, their learning styles, and their reasons for participating in the nonformal programs delivered via the distance mode. By thoroughly understanding the targeted audience, the educator can plan and deliver programs that are relevant, more effective, and address the needs of the learner, while matching the delivery strategies to
the learning styles of the participants. Although it is difficult to address the learning styles
of all participants, especially when groups may be large, a combination of teaching
strategies may be included that address most of the participant’s learning styles. This
knowledge and awareness will also allow distance educators to plan and vary their
presentations according to learner feedback during the educational transaction.

In summary, the provider of nonformal distance education must plan within the
scope of the mission and philosophy of their organization. Adult educators, who use
distance education in planning and delivering planned programs, in order to remain
effective and relevant, must plan for meaningful interaction between learners and subject
content, instructors and learners, and learners and learners. They should consider the
characteristics of the learners and plan and revise teaching-learning strategies in order to
create and maintain learner interest and subject relevance. This will require that the
educator utilize a combination of teaching-learning strategies as well as a combination of
communication media and delivery technologies in order to deliver quality programs via
the distance mode.

Systems Theory

Parson (1977) explains the concept of systems and stresses the importance of
interdependency with the environment. Earlier, Griffiths (1964, p.116) describes “an open
system is related to and exchanges matter with its environment, while a closed system is
not related to nor does it exchange matter with its environment.” In this inquiry the ability
to view the system as a whole allowed the investigator to view distance education as a
whole rather than as a set of individual, disconnected parts.
In this study the Cooperative Extension System, as the provider organization, is viewed as a system. The programming process that it uses to achieve its mission and facilitate change is also a system. These two systems are complex and consist of interrelated subsystems such as; the target learners, the instructors, the administration, the delivery technology, and the organization. In order to apply systems theory to nonformal education each of these subsystems was treated as an independent entity, while the concept of nonformal distance education was considered as a whole.

Application of systems analysis to distance education could assist educators in accomplishing the following things according to Saba and Twitchell (1988, p.12);

- understand the comprehensive structure of distance education.
- identify critical functions of distance education.
- predict and control the intertwined relationships among the functions of a distance education system.
- determine the optimal performance of a distance system for serving its clients (learners, parents, etc.).
- determine the impact of environmental changes on a distance education system and the impact of the system’s performance on its environment.
- design more effective and efficient distance education systems.

Lippitt (1982, p. 32) defines a human or social system as a “stable pattern of interaction between interdependent social units.” Nonformal distance education and the parent or delivering organizations are, according to this definition, social systems. Understanding social systems involved in nonformal education is essential to ensuring that
the organization’s educational objectives are met. According to Boone (1985, pp.93-94) “new learning or behavior that is facilitated by an organization’s educational endeavors can best be reinforced by the social system of which the individual is a part.” This reinforcement is applicable not only to the learner and the social system to which that individual belongs, but to the stakeholders, the instructors, the administrators, and to those social systems to which they belong as a subsystem of the distance education system.

Lippitt (1982) suggests that the systems approach allows for the multi-disciplinary problem solving approach to solving real world problems. This approach allows the adult educator to have a better perspective of the situation and to offer solutions that are more likely to lead to a positive resolution of the problem or issue. It is important then that nonformal distance education remain an open system as described by Griffiths (1964) in order to accommodate the rapidly changing technologies available for communication and delivery and in order to deal with continuous changes in the economic, political and cultural factors within the environment in which the programs delivered via traditional education modes or the distance education mode exist.

Adult educators who use the social systems approach are able to design a program that better addresses the needs of the target publics. They are clear on the relationships of the various systems with which they interact. For example, if adult educators know, during the planning stage, the current level of the target publics knowledge, they can design learning activities that are sequential and build on that knowledge. If the available level of technology for delivery is known then strategies can be developed that are appropriate for utilizing that level of technology.
Summary of Concepts

A model is a representation of some more complex phenomena which is utilized by educators to help explain that phenomena. The model is composed of the processual tasks that have been identified, by experience and observation, incorporating ideas and inputs from professional and experts in the field, reviewing relevant literature and research related to the field and by testing the model in actual field situations. When validated, a model is considered useful if it proves to be applicable to many situations.

Programming consists of three distinct interrelated subprocesses which are planning, design and implementation, and evaluation and accountability. Programming consists of all of the deliberate activities engaged in by the adult education provider, from the initial examination of the philosophy and mission of the educational organization all the way through to the summative evaluation and revision of the program. This process is aimed at bringing about positive changes in individuals and society and is designed to meet the needs of the identified target public.

The planned program which is an integral part of the programming process is composed of all of the programming activities engaged in by the learner and the educator. The primary components of a program are: purpose, order, and finiteness. It has a reason or set of objectives, a set of sequenced activities leading to achievement of those objectives and specified outcomes.

Distance education is a descriptive concept that encompasses a spectrum of learner focused activities in which the learner and instructor are separated in time or place, or both. Technology, from print media to interactive television, is utilized as a
communication tool to deliver educational information and study materials between the instructor and the learner and to provide for learner-content, learner-instructor, and learner-learner interaction.

Systems theory provides a mechanism by which the educator can view distance education as a whole or as a part of the conceptual programming process rather than as individual, disconnected parts. The analysis of the programming process as a system with distance education being viewed as an integral part allows the educator to determine the level of interaction between the systems and to broaden his/her perspective of the situation. This broadened perspective and increased knowledge about the programming process and distance education allows the educator to arrive at better solutions that help to achieve the goals and objectives of the planned program.

**Conceptual Framework of the Study**

This research was undertaken in an effort to adapt the conceptual programming model to accent and include distance education methodologies as an integral part of the model. The model serves as a guide for planning, designing and implementing, and evaluating and accounting for new programs, as well as, for evaluating existing programs.

The conceptual programming model was developed by Boone (1985). It was selected for three reasons. First, it is generic in nature and can be easily applied in a variety of educational settings and second it is aimed at understanding and effecting change in individuals and society. This was relevant to the study since the outcomes sought through using the programming process is to facilitate and effect changes in knowledge, skills, attitudes, and aspirations at both the individual and at the societal level.
Next the programming model views system as an important concept. The conceptual programming model (i.e. process) and its three interrelated subprocesses are displayed in Figure 1.
A CONCEPTUAL PROGRAMMING MODEL

Planning

The organization & its renewal process

Linking the organization to its publics

Design and Implementation

Designing the planned program

Implementing the planned program

Evaluation and Accountability

Measuring inputs and outputs

Reporting to relevant publics

Program revision

Figure 1

Adapted from Boone (1985, p. 61)
Boone’s conceptual programming model as referred to earlier and displayed in Figure 1 is the focus of this research. It is composed of three interrelated subprocesses; (a) planning, (b) design and implementation, and (c) evaluation and accountability. These subprocesses include a number of dimensions and related processual tasks.

As displayed in Figure 1 the planning subprocess includes two dimensions namely, the organization and its renewal process and linking the organization to its publics. Educators should be committed to the mission, philosophy, and objectives of the organization and understand the roles and relationships established by the organizational structure. To accent distance education as a critical means for delivering much of its planned programs strong references must be made to the importance of distance education as both a concept and delivery mode in the adult education organization statement of mission, philosophy, goals, organizational structure, its management system, and its programming process.

In order to effectively link the adult education organization to its publics, the educator must understand the economic, social, cultural, political, and technological environment in which it operates and the interaction of these forces on the organization’s publics and their educational needs through continuous environmental scans. The adult education organization identifies and maps its target publics, identifies their formal and informal leaders, and engages these leaders in collaborative identification, assessment and analysis of the educational needs of the target publics they represent. Failure to carry out the planning subprocess, and to jump right into the design and implementation subprocess has been cited as the reason for failure of many educational programs.
The next subprocess in the conceptual programming model is design and implementation. Three dimensions of this subprocess are; “(a) the planned program, (b) plans of action, and (c) action strategies” (Boone, 1985, p.68). The planned program focuses on the macro level needs identified and assessed in the planning subprocess, macro objectives to be achieved, change strategies and macro outcomes sought in terms of the targeted learner system. The planned program is the blueprint/prospectus that drives the change effort of the adult education organization. It is in this blueprint for change that recognition must be given to the use of distance education instructional design strategies.

The implementation of the planned program requires that the educator design incremental plans of action that are connected to the attainment of the needs and objectives of the targeted learner system defined in the planned program. It is very important that the use of distance education methodologies be included in the plans of action.

The last subprocess of the conceptual programming model is evaluation and accountability. Evaluation begins during the planning subprocess and continues throughout the entire programming process. Formative evaluation is carried out as the program is being developed in order to make changes that will assure that the program remains focused on needs of the learners and the desired outcomes. This helps the adult/distance educator to refocus efforts and rectify errors that are made in such areas as mapping the target publics, or identifying needs prior to program implementation. Summative evaluation is used to determine if program objectives have been achieved, to revise the program for future delivery, and also for reporting outcomes to relevant stakeholders.
Accountability refers to the process of reporting efficiency of planned program operation, primarily to the learners and leaders of the target public, the organization, the funding sources, the profession, and, where appropriate, the governance body. Communication is essential to accountability. Reporting the achievement of outcomes to participants, funders, and the organization is imperative to the growth and renewal of the organization. In order to increase educational efficiency, in this world of finite resources, it is important to report to the profession those delivery modes and methods that work as well as those that don’t.

In summary, the conceptual programming model constituted the conceptual framework for this study. The three subprocesses and the processual tasks encompassed within each of these subprocesses are the objects of the study in that their assessment and possible alteration are critical to the integration of distance education into the programming process.

This study was initiated because of the seemingly lack of emphasis on distance education as a delivery mode in the conceptual programming model that is used by state Cooperative Extension Services across the nation. The goal of this study was to adapt the conceptual programming model to accent its inclusion of the distance education delivery mode.

Review of Related Literature

In order to understand the need to modify and adapt the conceptual programming model to accommodate distance education and its evolving instructional technologies, a synthesis of literature relevant to both programming and distance education was
developed. This review serves to illuminate and help explain the conceptual programming model displayed in Figure 1.

*Distance Learning*

Distance education is a dynamic and constantly changing delivery mode for educational programs. According to Moore (1989a) the earliest form of distance teaching was in medieval times utilizing the didactic text, in the early nineteenth century this was advanced with the development of home study guides that accompanied the text. These early programs in the form of correspondence courses and educational publications served millions of distance learners. Hall (1990) described distance learning as a fast growing instructional pattern worldwide. Saba and Twitchell (1988) delineated the purpose of distance education as follows: to eliminate time and distance constraints in the delivery and utilization of educational services, to provide educational services to those unable to participate in conventional learning, and to provide continuing education to adults who wish to acquire new skills and knowledge. Lauzon and Moore (1989) found that distance education is no longer a marginal activity but is now seen as an essential means for individuals to adapt to a changing world. They indicate that recent developments in educational technology are facilitating the development of a fourth generation distance education system knocking down the barriers of time and place.

Lauzon (1992) indicated that distance education design had been focused more on the education design rather than the process of learning. His findings agree with those of Garrison (1990) who found that little attention has been paid to the teaching learning process and to the essential nature of an educational learning experience. They explain
that education is a transactional process which is characterized by the exchange of ideas, thoughts, and feelings between and among people, resulting in new ways of viewing or relating to the world or in new ways of acting. Perhaps because of distance education’s early origins in correspondence study, which has limited means of conducting dialogue effectively and efficiently, more emphasis has been placed on structure rather than creating an opportunity for interaction.

According to Gibson, Boelter, Boyce, and LeFebvre (1992) many barriers keep people from participating in classes which include lack of time and money, inconvenient scheduling or location of classes, and even lack of confidence. Cross and Jones (1977) discovered similar barriers with the addition of accumulation of credits. Sullins, Hoerner, and Whisnat (1989) found that rural citizens did not participate because of isolation, cultural homogeneity, tradition, and lack of economies of size and scale. Sullins et. al. (1989) were able to categorize the barriers that inhibit participation in distance learning.

These barriers fall into four categories which are described as; “situational” which is associated with an individual’s family status, occupation, or social group, “institutional” organizational policies that preclude participation, “dispositional” personal considerations such as lack of confidence in ability, tired of being in school, or not enjoying studying, and “policy” which is lack of legislative support and lack of public empathy. It was pointed out that many of these barriers could be overcome by changes in policies, procedures, programs, or services. Distance education was reported as one method of overcoming several of these barriers to participation in educational programs (Gibson et. al., 1992; Sullins et. al., 1989).
Self study educational programs aren't new, but what is new, according to Israel and Ingram (1991), is using video tapes and workbooks to deliver educational programs. They point out that there are barriers to participation in programs delivered via the distance mode as in traditional delivery methods. These would include the amount of travel to obtain workbooks and materials to participate, the availability of the necessary hardware to participate, the educational level of the target audience, and competition for time due to employment or other activities.

Ezell (1989) points out that with the convergence of communications technology, which is to say one network capable of bringing voice, data, and video into the home, office, and workplace, will be more powerful in spreading ideas and concepts around the world than print media has been. She also suggests that sites for this type of communication might be in the home, on the road, at the satellite office, or any of several other convenient locations. These findings are in agreement with Parnell (1986) who found that distance education could be less labor intensive than traditional methods, and that by using low-cost methods such as micro computers, that a higher percentage of those in the target audience might be reached. Lauzon and Moore (1989) agreed, finding that recent developments in educational technology are facilitating the development of a distance system that is knocking down that barrier of time and place. While technological means for rapid knowledge dissemination are continuing to be developed, Altbach (1991) cautions that continued debate over issues of control and ownership of these advances could lead to increased centralization rather than wider access.
Iams and Marion (1991) found what people are attempting to learn has an effect on how they prefer to learn. They indicated that television, radio, and newspapers are the preferred sources of educational information on energy conservation. But when the information sought is changed to financial or health management, then pamphlets, correspondence courses, and recorded telephone messages become the methods of choice.

Eling (1993) indicates that advances such as the portable video cassette player and the laptop computer will make man less dependent on society for basic services and more self-sufficient. These distance learning technologies will bring information to the learner. As a result, according to Ezell (1989), the role of the county agent will be one of facilitator rather than an information specialist. This role will require constant retooling and retraining as changes in information technology continue. Eling (1993) indicates that self help publications and Extension courses will continue to proliferate. His implication is that the future of Extension will be guaranteed if it can adapt to future needs and future technology while maintaining it’s most fundamental value. "helping people help themselves.” These findings are supportive of the need to adapt the conceptual programming model for distance delivery as Cooperative Extension and its field faculty strive to adapt to increasing demands for delivery of programs via the use of the distance education instructional mode.

According to Greer and Ziebarth (1994) the University of Wisconsin Cooperative Extension Service follows a philosophy that the satellite portion of the video conference is only one part of the total learning experience, on-site activities and print materials are just
as important. Because the video portion tends to take more time and monetary resources, it is often easy to relegate other teaching tools to the background.

Moore (1989b) describes three types of interactions that take place during learning, learner-content interaction, learner-instructor interaction, and learner-learner interaction. He suggests that the weakness in many programs delivered via the distance mode is their commitment to only one type of delivery medium. When only one type of medium is utilized then it is likely that only one type of interaction is done well. Moore (1989b) proposes that distance educators must plan for all three kinds of interaction to take place, which in effect causes the educators as well as the communication specialists to collaborate in the programming process. This has come about as the result of the fact that we can now assemble a class of students who may interact not only with the teacher but with each other through the use of technology. According to Garrison (1990) this means that distance education is no longer an independent and isolated form of learning, but instead, begins to approach the interactive ideal of an educational experience.

Distance education using information technology will grow exponentially over the next decade according to Massey and Zemsky (1995). It offers an economical means of providing the continuous education the U.S. now requires. Donaldson (1990) agrees suggesting that we are living in an audio, visual, and a computer world where there are new options for teaching evolving every day. Research is shedding new light on the learning process. Educators need to expand their openness to assessing both methods and results, not allowing selection of methodologies to rest on past patterns and traditional delivery systems. Massey and Zemsky (1995) suggest that information technology will
change teaching profoundly, much as the printing press forever changed teaching. Garrison (1990) found that physical distance of the student does not necessitate a cognitive and affective separation from the teacher. It appears, according to Garrison (1990), that a sense of belonging to a larger group and a sense of common purpose and mutual exploration can be established and maintained utilizing technology such as audio teleconferencing. Massey and Zemsky (1995) propose that distance education and the utilization of technology offers both economies of scale, after high initial investment, and the opportunity for faculty to accommodate individual differences in student goals, learning styles, and abilities while providing convenience for both student and faculty on an "any time, any place" basis.

**Distance Learning in Extension**

Distance education can be an important catalyst for rural and community development. According to Harriman (1989) "It's affecting the way we do Extension business by changing the face of education." Using information technology effectively to deliver education is an important challenge. This challenge points to the need to develop a tested programming model to assist Extension educators in developing new programs and improving existing programs delivered via the distance mode. As a distance education technique, video conferencing has the potential to reach people in urban and remote rural locations. A major goal of Extension educators using this delivery technique is making it acceptable to Extension professionals and clientele. Part of Extension's mission has been to offer continuing education for professionals, the opportunity for individuals to take college level courses in rural areas, and short courses to help farmers and small businesses
adapt to new technologies. Traditionally, these courses have been offered at a specific site, which is costly in time and travel. The implementation of conference telephone calls, video recorded programs, satellite linkups, and microcomputer educational programs have made it possible to offer such courses remotely (Fulton, 1992).

Cooperative Extension traditionally offers educational programs at daytime or evening meetings. Lifestyles and economic changes mean Extension has to reevaluate delivery methods and services. Iams and Marion (1991), found that people were willing to accept alternative delivery methods like renting educational videotapes. The availability of electronic equipment like satellite dishes in remote, rural areas also increased their willingness to participate in lifelong learning. Extension’s faculty need to hone their skills in teaching about critical issues like water quality by both live and taped television programming.

Nontraditional delivery of educational opportunities can attract new audiences to Extension. As Extension strives to reach these diverse audiences the programming model adapted and revised as a result of this investigation will be extremely useful. Gibson et al. (1992) found that 96% of nontraditional participants in a programs delivered via the distance mode stated a strong preference for distance education as opposed to traditional delivery methods.

Satellite video conferencing is no longer a novel programming method for Extension staff or much of their clientele. This distance education delivery medium can be highly successful when program planners follow effective instructional design principles included in the programming model. Such programs also save specialist and participant
travel time and bring to remote sites a wealth of expertise that might not otherwise be available (Greer & Ziebarth, 1994). Chesney (1992) found that Extension policy makers believed that Extension had been fairly aggressive in using technology, such as computers and distance education in program delivery. However at this time there is no widely accepted model available to assist Extension’s distance educators with programming efforts utilizing this rapidly expanding delivery mode.

Iams and Marion (1991) indicate that people were reluctant to drive long distances to obtain educational information, but studying at home was a different matter. Since some respondents were willing to pay up to $20 to enroll in a home study course, they suggested that the Extension Service should make greater use of this delivery method.

Demands on people's time will grow, but working people can watch a professionally produced educational videotape while riding an exercise bicycle. Retirees can study in an Extension-produced home study course at their leisure. To survive and flourish in this highly competitive environment, Extension’s faculty will have to regroup. Training to produce professional educational television programs and videotapes can no longer be looked on as a luxury to do "someday" but as an immediate necessity (Iams & Marion, 1991).

The distance education delivery mode can also be utilized efficiently within Extension. Hermann (1991) and Thomson (1993) found that many Extension professionals were struggling with finding cost efficient and accessible in-service training and graduate opportunities within the constraints of full time employment and the distance from university settings. These agents indicated they preferred to receive educational support
from the specialists through face-to-face in-service offerings or through one-on-one contact. Participation in distance education opportunities by agents was found to be higher by both Hermann (1991) and Thomson (1993) than enrollment in traditional in-service offerings. The participants indicated that those features of distance education that enhanced the likelihood of successfully completing the instruction included; substantive content, reasonable time commitments, flexibility to carry out learning, structure within individual lessons, hands-on learning through projects, and interactive learning (Hermann, 1991, & Thomson, 1993).

Five important aspects of effective learning that Fulton (1992) describes are; contact between the student and the instructor, active learning through writing out answers as opposed to passive learning associated with multiple-choice type questions, timely feedback to the instructor on students' comprehension, timely feedback to students on work completed, and the opportunity for students to make revisions to work done and learn from their mistakes.

Fulton (1990) found that distance education using microcomputers overcame some of the difficulty that occurs due to limited instructor contact during weekly class sessions, the students learned more, and the financial cost was small relative to other alternatives. The benefit to the instructor was a more enjoyable class to teach since the students were learning more. Feedback about how the students were grasping the material allowed the instructor to deliver more pertinent lectures, leading to a better atmosphere in the classroom and a more positive learning experience.
Computers, combined with telecommunications, offer many opportunities as tools in programs delivered via the distance mode. Fulton (1992) suggested that a program utilizing a combination of delivery technologies could be used for Extension programs in a variety of situations such as, in-service training of county Extension agents, with a correspondence course, in combination with computer networks plus a satellite transmission of lectures. Harris and Larsen (1995) found that the use of networked computers could connect a rural clientele with the universities and provide access to enriching information, communications, which would lead to collaboration with universities, agencies, and others. They suggested that Extension could utilize this technology to deliver educational opportunities from, receiving electronic publications and placing orders for educational materials to, allowing staff and clientele to interact across space, time, and cultural bounds. According to Fulton (1992) "The advances in the computer field mean we're limited only by our imaginations in implementing effective distance education programs in the future."

*Programming*

In addition to the framework provided for this inquiry (Figure 1), other research about programming reviewed by the investigator reinforced the need for adapting the conceptual programming model to accent distance education in Cooperative Extension. McClure (1978) gives six reasons for planning. First, planning provides for a rational response to uncertainty and change. Second, planning focuses attention on goals and objectives. Third, planning is important as an aid in resource allocation. Fourth, planning serves as a basis for determining individual, departmental, organizational or
program accountability. Fifth, planning facilitates control of organizational operations by collecting information to evaluate the various programs or services. Finally, planning orients the organization to a futuristic stance rather than operating from a reactive stance.

Baker (1984), in describing the program planning process, discusses the organizational context in which planning takes place. This includes a clarification of the organization’s philosophy and mandate, organizational assessment, and recognition of the need for planning, determining the best organizational structure to facilitate planning, reaches decisions about the nature and content of its overall Extension program, prepares detailed plans, and sets about to implement the program plan. Baker (1984), Burnham (1988), Hayes (1990), and Sandy (1991) describe a process by which adult educators analyze the situation, and identify learner needs as a starting point in the planning process. Each start by clearly identifying the target group that could make a difference in addressing issues of concern. They each point out the necessity of taking into account the context and diversity within the target group. All of these researchers indicate a need for active learner involvement in the programming process and evidence suggests that more meaningful and permanent learning occurs when the adult learner is actively engaged in the programming activity. These researchers also include as a part of the programming process, a statement of program objectives, an inventory of resources, a selection of delivery methods and strategies, implementation of the program, and evaluation of the process and the results.

Casey and Krueger (1991) in analysis of critical factors for successful Extension programs found that agents conducting these programs solicited ideas from clientele,
peers, experts, other agencies, other states and areas outside Extension. They continually marketed their program and set priorities in order to focus their energies. They tried to keep their perspective by being visionary and looking ahead while at the same time being reflective and looking at the past. Success, in their opinion, was more than just numbers, it included the positive impacts on peoples lives and increased alternatives that learners were able to effectively use in decision making.

Boone (1985) and Burnhan (1988) introduce the concept of linkage of the program to the client and the community using a pattern of community involvement which was characterized by cooperation among planners, learners, and instructors. Daugherty (1992) indicates that Extension must identify and preserve what has made it strong and viable for 75 years. This includes a grassroots approach to programming based on client’s needs. Extension is known for its ability to identify an issue, develop a program to address the issue, and evaluate the program’s success in resolving the issue.

To successfully develop educational opportunities for adults, Aslanian and Brickell (1980) suggest that educators could be assisted by identifying prospective clients, selecting appropriate marketing techniques to reach these prospective clients, designing programs that are relevant, and meet the needs of adults who vary according to age, level of education, occupation, income, and culture. Verma and Burns (1995) found, in Extension in Louisiana, that clientele identification and marketing were crucial to the success of programming efforts. This is in agreement with Hayes (1990) who found that assessing learner needs, determining active involvement, accommodating and relating instruction to adult roles, promoting developmentally related outcomes, and adapting
methods for the particular learning session were all important in delivering educational programs via the distance mode. Aslanian and Brickell (1980) also saw a need to build relationships with other organizations such as employers, community agencies, and other educational providers in order to evaluate and redirect program efforts. This may mean that providers will have to offer educational opportunities in nontraditional forms, and at nontraditional times, and places (Aslanian & Brickell, 1980).

Wolcott (1993) found in her study of the planning process for faculty who were actively engaged in distance teaching, that planning was done at the term level and that it was a time consuming front end activity, rather than an ongoing one. Content was the starting point of planning and methodology was secondary which resulted in an extended syllabus. She found that little consideration was given to the context in which the instruction would take place, optimal instructional strategies, or the intended learning outcomes. Wolcott (1993) posited that this lack of consideration for the planning or evaluation and accountability in program planning led to lack of effectiveness and failure to achieve desired outcomes in many instances. This research points directly to the need for some reliable widely accepted model for programming in nonformal distance education to be used to increase the efficiency and quality of Extension programs delivered via the distance mode.

Reeves and Jaunch (1978) indicated that the time from educational program inception to delivery is lengthy (1-2 years), but it can be offset by the longer life of the program, as well as the ability to offer it continually. They posited that the Delphi process could be used to improve the rationality of curriculum design and that this process would
allow educators to utilize the best available knowledge rather than the method currently employed, that of trial and error. Greer and Ziebarth (1994) suggest several guidelines for development of successful programs delivered via the distance mode within Extension that they believe will magnify the success of Extension's issues based programming. These included, identifying a critical issue that was part of an ongoing Extension effort and building a team to plan and produce the program which included those with content expertise, production/instructional design skills, and people outside the university who have special knowledge and community contacts. Gibson et. al. (1992) found that content and delivery expertise brought together in a design team is important for successful programming to occur. This team should include not only Extension field staff and content specialists, but also adult educators and media/design specialists.

A distance education system should consist of a network of knowledge sources, processors, managers, communication media, and learners according to Moore (1993). He suggests that instruction is no longer an individuals work, but the work of teams of specialists including media specialists, knowledge specialists, instructional design specialists, and learning specialists. His system would derive knowledge from multiple sources, utilize experts to structure that knowledge into a deliverable format, and deliver that knowledge through a variety of communications media. Instructors would serve as facilitators to learners who are located in schools, colleges, homes, workplaces, and elsewhere in groups and as individuals.

Time spent developing either face-to-face or correspondence based in-service training may not differ significantly (Thomson, 1993). However, correspondence-based
instruction offers the potential to involve graduate students and Extension support personnel in new ways. From the specialist's prospective, this educational method allowed him to provide agents with the most up-to-date information, yet maximized their flexibility in its study and use (Thomson, 1993).

Eastmond (1993) proposes that the principles of conventional instructional programming can be adapted to programs delivered via the distance mode, but only if both caution and ingenuity are used in the programming process. His conjecture led to the adaption of the Boone (1985) conceptual programming model as the framework on which to base this inquiry. He sees design of instruction as beginning only after a system-wide needs assessment (internal and external) has been completed. This is in agreement with the conceptual programming model which emphasizes the need for organizational understanding and commitment and the linkage of the organization to its publics through interfacing with the target publics leaders to identify, assess, and analyze learner needs.

Eastmond (1993) goes on to indicate that, with the needs assessment in hand, the designer of instruction for distance education must be creative and capable of trying out new ideas. He indicates that emphasis must be placed on areas of particular concern for distance education such as specifying constraints, exploring alternative solutions, selecting the best solution, and then designing, developing, and implementing this instruction. Eastmond (1993) and Boone (1985) both stress the importance of formative evaluation at this point in the programming process. They indicate that at this stage redirection can be made that will enhance the expected outcomes and may actually increase the likelihood that educational objectives will be realized.
Evaluation of educational programs has undergone a number of refinements since it was proposed as a discipline in the 1950's. According to Boone (1985) and Eastmond (1993) the evaluation subprocess’s emphasis has shifted from tests and measurements to behavioral objectives, to supplying information to decision makers, to an emphasis upon judgment and values. Clearly the success of a program must be judged based upon the learner needs determined in the needs assessment. Boone (1985) and Eastmond (1993) both indicate that a program that does not meet these needs must be judged as ineffective.

Summative evaluation is conducted after completion of a program and for the benefit of some external audience or decision maker. Boone (1985) and Eastmond (1993) indicate that these evaluations are useful in reporting to the funding agency as well as to possible future users and target publics. A frequent problem with evaluation information is that it does not receive the attention it deserves from people within or outside the distance education system. According to Eastmond (1993) these results must find their way into the design process in order for needed revisions to take place.

Boone (1985), Eastmond (1993), and McClure (1978) each emphasize the importance of formative and summative evaluation as a part of the planning process. Formative evaluation allows the programer to improve the program strategy. This evaluation is process oriented, taking place before and during the programs initial implementation. It provides both participants and facilitators with the opportunity to interact and share their ideas through live question and answer segments, "instant" opinion polls, and evaluation instruments that will enhance the effectiveness of formative evaluation. This process allows for continuous improvement.
Summative evaluation is product oriented, and allows one to measure degree of success by comparison of measures taken during the program, and at its conclusion, to predetermined measures of success. The second part of summative evaluation is accomplished when results or outputs are compared to the organizational goals.

Distance education provides a new set of challenges to Extension. Conscious effort is required to assure that this educational method is facilitating education, not just providing information. Gibson, et al. (1992) found that targeted marketing efforts are necessary, in addition to regular Extension marketing routes. These efforts should include innovative and non-traditional routes.

Distance education methods place increased responsibility on the learner, because the instructor is not physically present to help. In order to make innovative delivery technology like video-conferencing work, one must pay special attention to scheduling, promotion, and overall program design and format. Because distance education is a delivery method of the future, Extension educators must develop an effective programming strategy in order to make it an effective way to help people put knowledge to work.

Summary of the Chapter

This inquiry was designed to adapt the conceptual programming model, being used by the Cooperative Extension Service, to highlight and emphasize the use of emerging instructional technologies. Five concepts frame the inquiry. They were; Model building, problem solving, program, programming, and distance education in the Cooperative Extension Service. Distance education is viewed as a concept and method for delivering
programs within the Cooperative Extension System, which in turn operates within the larger social context. Research was discussed which indicates an ever expanding role for the distance delivery mode in providing relevant educational opportunities for learners in the future. Processual tasks were identified that were common to several programs delivered via the distance mode and which led to their success and effectiveness.

Research Questions

This study was conducted in order to adapt the conceptual programming model to accent the integration of distance education as a part of the model. The following research questions were used to guide and direct the inquiry as the model was developed.

1. What are the basic concepts and elements that are described in the literature that are useful in adapting a widely accepted and used programming model in planning, designing and implementing, and evaluating planned programs that emphasize the use of the distance education delivery mode?

2. Are the elements included in widely accepted theoretical models for programming in traditional formal and nonformal education useful in adapting a conceptual programming model for nonformal distance education delivered via the distance mode?

3. To what extent can advice sought from identified experts selected as being familiar with Extension programs delivered via the distance education mode coupled with an intensive review of the literature help in adapting the subprocesses and their processual tasks embodied in the conceptual programming model to
assure that emphasis is give to the use of distance education instructional
technologies?

4. How will responses, proposed by a panel of experts selected because of their
overarching roles in programming and distance education, confirm the correctness
of the adapted model and its inferred standards in planning, designing and
implementing, and evaluating nonformal programs delivered via the distance mode
in the Cooperative Extension Service?
CHAPTER 3

Methodology

The purpose of this research was to adapt Boone’s (1985) conceptual programming model to include and accent the incorporation of the distance education mode (i.e., methodology) in the model’s three subprocesses including planning, design and implementation, and evaluation and accountability. Zetterburg’s (1962) five steps of model building provided the framework for guiding this research. They included; (a) making/conducting an exploratory inquiry, (b) achieving a scholarly understanding, (c) scholarly confrontation, (d) calculation of solutions and, (e) presenting practical advice.

The Research Design

The first step in Zetterburg’s (1962) model is conducting an exploratory inquiry. This inquiry began with a thorough and critical review of the literature on the conceptual programming model (Boone, 1985) and related programming models. The object was to discover concepts and processes that had been molded into the conceptual programming model and more important, how they were connected to form a holistic systems approach to programming in formal and nonformal adult education context.

Paralleling this extensive literature review of the conceptual programming process in adult education was an in-depth search of the literature on distance education. The object was to explore and discover elements of distance education that seem to have relevance and applicability to the conceptual programming model (Boone, 1985). These reviews of literature (i.e. conceptual programming model and distance education) were useful to the researcher in broadening his understanding of both the conceptual
programming model and distance education, and more importantly helped him acquire
clues about how distance education concepts might be woven into the various aspects of
the conceptual programming model. To supplement his interpretation of the literature and
clues acquired for adapting the programming model to include the use of distance
education concepts and instructional technology, the researcher engaged several
knowledgeable adult educators in focused discussions about the conceptual programming
model and how it might be adapted to accent distance education. These persons provided
useful information about their experiences in using the conceptual programming model
and their views about how the subprocesses and processual tasks embodied in the model
could be adapted to include a focus on distance education in the planning and delivery of
planned programs. During these discussions an effort was also made to have these adult
educators identify programming and distance education experts/specialists from across the
country who might be invited to serve on a panel to assist in adapting the conceptual
programming model to include a focus on distance education.

Additionally the discussants were asked to identify programs of distinction that
were being delivered through distance education methodologies. It was out of these
discussions and follow-up inquiry with leaders of these programs of distance education
that the researcher began to form ideas about how to adapt the conceptual programming
model and also importantly how to put together panels of experts who would be asked to
assess and render judgments on each of the processual tasks embodied in the conceptual
programming model, and how changes might be made in each of these tasks to strengthen
their focus on distance education.
In the second step of Zetterburg’s (1962) model building process, “achieving a scholarly understanding of the phenomenon being studied” an investigation of the genesis of the model and its conceptual focus was undertaken by the researcher. Nonformal education and its context were examined to gain insights on how programs were planned, designed and implemented, and evaluated by organizations like the Cooperative Extension Service in which the target publics voluntarily participate and the outcomes sought in these publics are helping them to acquire additional knowledge and strengthen their everyday coping skills, in a word, a form of empowerment.

Loomis’s (1960) PAS model proved to be useful in providing a framework for investigating the nature of nonformal education and the structure (i.e. social organization, patterns of interaction) of learner publics that participate in learning contexts in which the educational programs delivered via distance education on knowledge acquisition and problem solving skills. Systems theory (Loomis, 1960) also provided insights about how the conceptual programming model had been formed, its functions, structure and processes, and how it constituted the rationale and means for the functioning of the Cooperative Extension Service. This effort by the researcher to gain a more in depth understanding of the programming and distance education phenomena was enlightening and informed him how to begin the process of making needed alterations in each of the processual tasks embodied in the conceptual programming model to accent distance education as an alternative and viable mode for delivering planned programs to larger numbers of targeted learner systems.
In step three of Zetterburg’s (1960) model building process, the relationships discovered in steps one and two were examined. Changes critical to the conceptual programming model and each of its processual tasks to accent distance education were identified and incorporated in the statement of each task. These adapted processual tasks were compared to those used by Mohdnor (1995) in his effort to develop a conceptual programming model that focused on the use of distance education methodologies in delivering education instruction and curricula in the formal context. This comparison allowed the further refinement of the adaptations made by this researcher which were then subjected to a critical analysis by fellow graduate students pursuing advanced degrees in adult education at North Carolina State University, his graduate faculty advisory committee, and distance education practitioners. These reviewers suggested that several of the adapted processual tasks could be consolidated to add clarity to the conceptual programming model. Through these discussions, the processual tasks were reduced in number and then incorporated into a tentative adapted programming model.

A pilot study was conducted to explore, test, and seek confirmation of the conceptual programming model and its modified processual tasks. This tentative, adapted programming model was presented to a group of eleven selected nonformal distance educators, professionals, administrators, practitioners, and programmers who were knowledgeable and had some experience in the area of distance education methodologies in delivery of programs in the Cooperative Extension Service. These individuals were selected in consultation with the co-chairs of the researcher’s graduate faculty advisory committee based on reputation, roles in distance education, familiarity with the emerging
delivery technologies, and prior responsibilities for distance education delivery and programming. Nine agreed to participate and provide feedback on the adapted, tentative model (see Appendix B for a list of the preliminary panel of experts). A survey instrument that asked these educators to evaluate each of the processual tasks, on a Likert type scale, was delivered to them by surface mail, fax, or electronic mail. The nine experts were also invited to make additions, deletions, corrections, and suggestions as well as to recommend additional processual tasks to be included in the adapted programming model. This process served to refine and clarify the adapted model that would later be presented to the final panel of experts.

As a result of the pilot study the number of processual tasks was further reduced in number. The panel suggested dropping one processual task (Number 41, Appendix A) concerning the formative and summative evaluations of nonformal distance education because they perceived that both of these types of evaluations were addressed in other processual tasks of the model. Clarification of wording and terminology was made in six processual tasks to allow them to be more easily understood and applied by users in each of the state Extension Services. The pilot study used a 3.00 mean score as criterion for criticalness. All of the remaining processual tasks reached this level of criticalness and were included in the proposed adapted model.

The third step, in the model building process, provided a clearer perspective of the processual tasks included in the tentative adapted programming model. The presentation of the tentative, adapted model to the preliminary panel proved essential as it helped to refine and clarify the adapted conceptual programming model.
The fourth step, in the process of adapting the conceptual programming model, was the discovery of a solution. In this study the solution was the adaptation of the conceptual programming model from the tentative, adapted model tested during the previous step, scholarly confrontation. Analysis of the feedback from the pilot study and data from that study were used in conjunction with advice from the researcher’s graduate committee to confirm, reject, or modify the processual tasks of the tentative model to the greatest degree possible prior to submission to the final panel of experts. Data collection and the review of results of the pilot study with members of the researcher’s advisory committee were critical to the process of adapting the conceptual programming model.

The final step in Zetterburg’s (1962) process was practical advice. In order to provide for the broad applicability of the adapted model and in order to receive inputs representative of the entire Cooperative Extension System, the researcher in consultation with members of the advisory committee used the following procedure for selecting members of the final panel. The U.S. Cooperative Extension System is divided into four major geographical regions (North Eastern, Southern, North Central, and Western). The states in each of these regions were sorted by population density into three similar sized groups. Those having the highest population density were considered more urbanized, those with intermediate population density were considered transitional, and those with the lowest population density were considered rural. One state was selected at random from each of these twelve groups.

The final panel of experts was made up of Extension professionals responsible for programming and the delivery of nonformal programs via the distance mode in each of the
four Extension major program areas in their respective states (Agriculture, 4-H, Family and Consumer Sciences, and Community and Rural Development). From these 12 states, 48 individuals were identified, and requests were sent asking for their participation. These 48 individuals were presumed, because of their positional responsibilities, to be knowledgeable of the programming process and distance education in the Cooperative Extension Service and to meet the five basic criteria for selection identified by Tersine and Riggs (1976) which include;

1. A basic knowledge of the problem area and ability to apply that knowledge.
2. A good performance record in their area of focus.
3. A high degree of objectivity and rationality.
4. The time available to participate throughout the process.
5. A willingness to give the time necessary to do a thorough job.

Twenty-seven of those selected agreed to participate in the first round and 23 participated in the second or follow up round. Although there are not specific guidelines for determining the optimum number of participants, Tersine and Riggs (1976) indicated that a panel of 10 to 15 members was sufficient. A panel of 30 people was judged to be the ideal size by Allen (1978). Martino (1972) found that a panel of 15 experts from a particular field was sufficient to produce reliable results. Their positions within each of their states Extension Services established the first three of these criteria. These 27 individuals in the first round represented 11 states and each indicated a willingness to give the time needed to do a thorough job.
As part of this process a modified Delphi technique (Introduced by the Rand Corporation in the 1950's) was employed in conducting the research. Its purpose was to reach a consensus among the selected panel of experts.

The general procedures for the Delphi technique are as follows (Uhl, 1983, p.82):

1. The participants were asked to list their opinions on a specific topic such as curriculum revision or planning priorities.

2. The participants are then asked to evaluate each of the processual tasks in terms of importance and criticality to the success.

3. The participants receive the list of processual tasks and a summary of their initial and the group's combined responses to the processual tasks. If the participants are in the minority, they are asked to revise their opinions or indicate their reasons for remaining in the minority.

4. The participants again receive the list, an updated summary, minority opinions, and another chance to reevaluate and revise their opinions.

The Delphi technique has been used in other studies of programming distance education and other disciplines in order to reach a consensus of opinion from various groups of experts (Mohdnor, 1995 and Weatherman & Swensen, 1974). This method allows for an anonymous, non interactive means of solicitation and collation of experts judgments on a particular topic through a carefully designed series of questionnaires which provide feedback of opinions from earlier responses (Delbecq, VandeVen, & Gustafon, 1975). According to Kooperman, et al. (1985) there are advantages associated with this method which include; the ability to overcome geographic limitations, the
reduction in the influence of dominant personalities, and the ability to solicit input from those who might otherwise not have the time or ability to participate.

The conceptual programming model to accent nonformal distance education in the Cooperative Extension Service was adapted over a series of two rounds. According to Reeves and Jaunch (1978) few changes of opinion occur after round two of this process. The revised and refined adapted conceptual programming model was posted on a web site so the final panel could review and provide their responses (see Appendix C). Selected panel members were e-mailed asking their willingness to participate. If they agreed, they were given access to the first round of the survey on the web. They used a five-point Likert-type scale to indicate their opinion as to each processual task’s importance to the adapted conceptual programming model for nonformal distance education. Space was provided so that each participant could indicate changes in wording or make suggestions related to each item. Space was also provided at the end of the questionnaire for additional items that the experts thought should be included. Second copies of the survey were sent and follow-up phone calls were made to non respondents.

Second-round questionnaires were e-mailed to those panelists who responded to the first round. Their individual responses from the previous round were indicated along with the mean rating, standard deviation, and variance calculated from the first round of responses. Each respondent was asked to rate the processual task again based on his or her previous rating and the mean, standard deviation, and variance ratings of the other respondents. Space was again allowed for comments and suggestions. Follow-up of non respondents was repeated as in round one.
Panel of Experts and Data Collection

There were two panels of experts involved in this research. The initial panel was asked to review and to evaluate the adapted conceptual programming model for nonformal distance education. This pilot study served to refine and review this adapted tentative model, which then became the initial adapted model. The preliminary panel was made up of nine experts from within Cooperative Extension and from Extension Partners identified by the researcher and advisory committee based on their reputation and familiarity with its nonformal programs delivered via the distance mode. The final panel of experts was involved in making final judgments about the adapted conceptual programming model.

Members of the final panel were selected to represent the four Extension regions and states that were considered rural, urbanizing and urban based on population density. Panelists were selected because of their position within their respective State Extension Services as assuming a state wide leadership role in their organization’s development and delivery of planned programs delivered via the distance mode.

A letter of introduction and general information about the study was sent to each of the prospective final panel members soliciting their participation in the study. Twenty-seven experts from eleven state Extension Services participated.

Analysis of data

Data were analyzed using the Statistical Package for Social Sciences (SPSS). Data from the Likert-type scale were processed to obtain descriptive statistics such as frequency distributions, average mean scores, medians, and standard deviations for each round. These mean, standard deviation, and variance scores were reported to the
respondents of the final panel following each round along with their previous selections.
The final version of the adapted model emerged from the last round of responses to the
preliminary model instrument by the final panel of experts.

In order to be included in the final model, the processual task had to have a mean
rating of 3.5 or higher on the five point scale and also be rated at least a four or five by
55% or more of the respondents in the final round. The mean score and percentage cut off
points have been used in previous studies of formal distance education (Mohdnor, 1995)
and would also indicate that most panelists would place priority on that processual task as
important within the conceptual programming model for nonformal distance education.
The Cronbach’s alpha coefficient also was used to determine the internal consistency
reliability (Jaeger, 1990) of the processual tasks in the model.
CHAPTER 4

Findings

The Cooperative Extension System has a long history as the nation’s leading adult education organization that focuses on nonformal education. From its beginning, Cooperative Extension used media as one of several methods of delivery of distance education programs to its publics. This use of newsletters, brochures, and pamphlets allowed wide distribution of the latest research findings to those that were separated from the educator in both time and space. These early adult educators developed and delivered effective programs often through trial and error. The demonstration method of teaching became Extension’s hallmark in teaching and convincing people to change their practices of farming and home making.

The latter part of the twentieth century saw the development of an audio, visual, and computer world where new options for teaching have been and are being explored and new information is being gained about the learning process. The purpose of this study was to adapt a widely used conceptual programming model to give new and increased emphasis to the use of evolving distance education instructional technologies in planning, designing and implementing, and evaluating and accounting for nonformal programs. The Zetterberg’s (1962) model building process was used to guide the researcher in an organized and systematic approach to model adaptation. The conceptual framework that facilitated the study was Boone’s (1985) conceptual programming model, its three subprocesses, and the processual tasks encompassed in these subprocesses.
Results of the Delphi Technique

Processual tasks were incorporated in the adapted conceptual programming model when they met the criterion for criticalness and consensus. The established criteria were those used by Mohdnor (1995) in his study of programs delivered via the distance mode in four year higher education institutions. He established criticalness of a processual task as those tasks with a mean score of 3.5 or above on a Likert-type scale of 1 to 5. Items which had a 3.5 but less than 4.0 were rounded to 4.

In order to reach a consensus, the responses in the 4 and 5 categories were considered to be usually and always important and those rejected were rated in the 1, 2, and 3 categories were considered never, seldom, and sometimes important. Those processual tasks where 55% or more of the experts in the round two survey rated usually and always important was used to determine consensus among the members of the panel. Only those items which the experts rated 55% or more usually and always important were deemed critical and included in the adapted conceptual programming model. The processual tasks and their compared means, frequencies, and standard deviations are organized and presented under their respective subprocess of planning, design and implementation, or evaluation and accountability.

Planning

According to Boone (1985) the planning subprocess included in his conceptual programming model contains of two interrelated dimensions. These two dimensions are (a) the organization and its renewal process and (b) linking the organization to its publics.
Processual tasks included in the organization and its renewal process dimension are; mission and philosophy, goals/objectives, organizational structure and roles, policies and procedures, management, and renewal. Processual tasks included in the second dimension of linking the institution to its publics include; study, analysis and mapping, identifying and interfacing with leaders, and collaborative needs assessment. The mean, standard deviation, and frequency of planning responses are shown in percentage in Tables 1 and 2 (Pages 75-79).

Mission and Philosophy

Four of the five processual tasks related to mission and philosophy met the criteria for criticalness and consensus as measured by the degree of importance assigned to them by the panel of experts. These include; “Cooperative Extension administrators, faculty, and support personnel at all levels are committed to using distance education methods when they are the appropriate teaching/learning mode,” “The programming process used by the CES in planning, designing and implementing, and evaluating and accounting for its programs recognizes and includes distance education as an appropriate and effective teaching/learning mode for program delivery,” “The CES encourages the use of distance education resources provided by other states Cooperative Extension Services and other credible providers if appropriate by their state and field faculty in the delivery of programs,” and “Cooperative Extension System educators apply sound principles of nonformal adult and youth education as appropriate in facilitating learning among distance education participants” were each accepted by the final panel. This indicated a strong agreement among the experts that as an organization Cooperative Extension must
demonstrate a commitment to distance education as an appropriate instructional mode for delivering nonformal educational opportunities to its publics. Further, they agreed that these beliefs about distance education must be communicated to the faculty and staff in such a manner that they would understand that distance education is an acceptable and effective instructional mode. The panel indicated that commitment to and acceptance of distance education by faculty and staff was necessary for distance education to be implemented effectively.

Only the processual task, “Distance education is recognized throughout the Cooperative Extension Service (CES) as an important delivery strategy for disseminating research-based information” was not accepted.

Goals/Objectives

Seventy-four percent of the respondents indicated “That the goals/objectives of the CES should communicate the importance of distance education as an educational delivery mode.” They emphasized that these goals must be consistent with the Extension mission and that educators must be committed to this delivery mode. Two processual tasks were not accepted with only 43% of the respondents agreeing that “The state CES should maintain a list of current information on distance education resources (e.g., software, information sites, etc.) available from other state’s Cooperative Extension Services and other providers” or “The CES should make the distance education resources (e.g., software, information sites, etc.) provided by other state’s Cooperative Extension Services and other providers available if appropriate for use by their state and field faculty in the delivery of planned programs.”
Organizational Structure and Roles

Neither of the processual tasks related to organizational structure and roles, “The CES has the distance education experts needed to assist CES faculty in acquiring the knowledge and skills needed to use distance education effectively as a teaching/learning mode for program delivery” nor “To assure that the goals of programs that use distance education methods are achieved, a plan is in place for the continuous support of the faculty and staff involved in distance education” were accepted by the experts. Although the panel felt these tasks were sometimes important (means of 3.22 and 3.15 respectively) they did not feel that it was necessary for CES to employ the distance education experts to assist the faculty in acquiring the knowledge and skills needed to use distance education effectively as a teaching/learning mode nor to provide the continuous support of this faculty to assure that programs delivered via the distance mode goals are achieved.

Policies and Procedures

In order to guide and facilitate the implementation of successful programs delivered via the distance mode certain policies and procedures are required. Policies and procedures are in place to ensure that programs delivered via the distance education mode are designed to provide comparable learning experiences to those provided via traditional delivery modes to the learner. These policies and procedures may vary from state to state and even within states at the county level.

Four of the processual tasks included in the policies and procedures dimension were accepted. “The quality of information for learning offered via the distance education mode is at least equivalent to information offered via traditional CES methods,” registered
the most difference of opinion among the experts, with a standard deviation of 1.28, of any processual task accepted in the planning sub-process. Some panel members argued that these nonformal educational programs were supposed to offer opportunities to all people and therefore should not have the same criteria while others argued that these offerings should be equivalent to those offered via traditional delivery modes. The processual task; “Cooperative Extension System distance education programs are designed to minimize barriers that limit target learners’ participation,” “Clientele involved in programs delivered via distance education have access to CES professionals equivalent to the access available to traditional program participants,” and “Educational resources provided to CES distance education participants are at least equivalent to those materials provided to participants of traditional CES delivery systems,” were usually or always important in programming for nonformal distance education.

Four processual tasks under policies and procedures were not accepted by the final panel of experts; “The CES has the instructional technology in place that its faculty needs for the delivery of programs via distance education,” “Continuous funding for distance education is at a level that indicates the CES’s commitment to deliver programs via distance education,” “An equal reward or incentive system exists for faculty who use distance education delivery and/or traditional delivery modes,” and “Local CES resources are adequate and accessible to potential distance education participants.” Although these processual tasks were not accepted, they all rated between sometimes and usually important (Mean scores of 3.57, 3.04, 3.43, and 3.05 respectively, Table 2).
**Management**

Those processual tasks relating to the management such as “The CES has a planned continuing professional development program for faculty to help them use distance education effectively in program delivery” and “The CES has a system to obtain and process feedback on programs delivered through distance education methods” were not accepted. Although the experts rate the system to obtain and process feedback as usually or always important (Mean 3.52) the frequency distribution was not 55% and therefore the level for consensus was not reached and the processual task was not considered for inclusion in the model. Both of these processual tasks were rated as sometimes important with means of 3.04 and 3.52 respectively.

**Linkage**

Only one processual task in the linkage dimension was accepted. “The CES is involved in identifying agencies, organizations, and groups that have a stake or interest in Extension’s distance education programs.” Processual tasks; “The CES faculty regularly scans its environment to identify potential target audiences that can best be reached via distance education,” “Needs assessments include input from the clientele and stakeholders about potential clientele groups and specific situations for which distance education modes can expand or enhance program delivery,” “The leaders of potential publics that can be effectively and efficiently served through distance education are regularly identified by the CES,” “The CES establishes and maintains communication with these key leaders for the purpose of engaging them in a discussion of the educational needs of their followers that can be best met through distance education,” and “The CES regularly
monitors the educational needs of its distance education audiences through periodic surveys and other forms of needs assessments” were not accepted by the final panel, but were all rated as sometimes important.
Table 1  Accepted Processual Tasks for the Planning Subprocess

<table>
<thead>
<tr>
<th></th>
<th>PLANNING</th>
<th>Mean Standard Deviation</th>
<th>Round-1</th>
<th>Round-2</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Frequency ( % for 4 &amp; 5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Mission and Philosophy</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Cooperative Extension administrators, faculty, and support personnel at all levels are committed to using distance education methods when they are the appropriate teaching/learning mode.</td>
<td>3.70</td>
<td>3.83</td>
<td>0.82</td>
</tr>
<tr>
<td>8.</td>
<td>The programming process used by the CES in planning, designing and implementing, and evaluating its programs recognizes and includes distance education as an appropriate and effective teaching/learning mode for program delivery.</td>
<td>3.62</td>
<td>3.74</td>
<td>1.06</td>
</tr>
<tr>
<td>12.</td>
<td>The CES encourages the use of distance education resources provided by other state’s Cooperative Extension Services and other credible providers if appropriate by their state and field faculty in the delivery of programs.</td>
<td>3.63</td>
<td>3.70</td>
<td>0.97</td>
</tr>
<tr>
<td>45.</td>
<td>Cooperative Extension System educators apply sound principles of nonformal adult and youth education as appropriate in facilitating learning among distance education participants.</td>
<td>3.62</td>
<td>3.77</td>
<td>1.13</td>
</tr>
<tr>
<td><strong>Goals/Objectives</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>The goals of the CES illustrate the importance of distance education as an educational delivery mode.</td>
<td>3.74</td>
<td>3.91</td>
<td>0.90</td>
</tr>
<tr>
<td><strong>Policies and Procedures</strong></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>26.</td>
<td>The quality of information for learning offered via the distance education mode is at least equivalent to information offered via traditional CES methods.</td>
<td>3.68</td>
<td>3.62</td>
<td>1.18</td>
</tr>
<tr>
<td>27.</td>
<td>Clientele involved in programs delivered via distance education have access to CES professionals equivalent to the access available to traditional program participants.</td>
<td>3.64</td>
<td>3.57</td>
<td>0.91</td>
</tr>
</tbody>
</table>
Table 1 (continued)

<table>
<thead>
<tr>
<th>PLANNING</th>
<th>Mean Standard Deviation Frequency ( % for 4 &amp; 5)</th>
<th>Round-1</th>
<th>Round-2</th>
</tr>
</thead>
<tbody>
<tr>
<td>29.</td>
<td>Educational resources provided to CES distance education participants are at least equivalent to those materials provided to participants of traditional CES delivery systems.</td>
<td>4.04</td>
<td>3.95</td>
</tr>
<tr>
<td></td>
<td>Mean Standard Deviation Frequency ( % for 4 &amp; 5)</td>
<td>0.72</td>
<td>0.72</td>
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<tr>
<td></td>
<td>76.9</td>
<td>72.7</td>
<td></td>
</tr>
<tr>
<td>37.</td>
<td>Cooperative Extension System distance education programs are designed to minimize barriers that limit target learners participation.</td>
<td>3.50</td>
<td>3.55</td>
</tr>
<tr>
<td></td>
<td>Mean Standard Deviation Frequency ( % for 4 &amp; 5)</td>
<td>0.91</td>
<td>0.91</td>
</tr>
<tr>
<td></td>
<td>53.8</td>
<td>54.5</td>
<td></td>
</tr>
<tr>
<td>Linkage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>The CES is involved in identifying agencies, organizations, and groups that have a stake or interest in Extension’s distance education programs.</td>
<td>3.41</td>
<td>3.57</td>
</tr>
<tr>
<td></td>
<td>Mean Standard Deviation Frequency ( % for 4 &amp; 5)</td>
<td>1.08</td>
<td>1.08</td>
</tr>
<tr>
<td></td>
<td>51.8</td>
<td>60.9</td>
<td></td>
</tr>
<tr>
<td>Mission and Philosophy</td>
<td>Round-1</td>
<td>Round-2</td>
<td></td>
</tr>
<tr>
<td>------------------------------------------------------------</td>
<td>---------</td>
<td>---------</td>
<td></td>
</tr>
<tr>
<td>1.  Distance education is recognized throughout the Cooperative Extension Service (CES) as an important delivery strategy for disseminating research-based information.</td>
<td>3.22</td>
<td>3.26</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.89</td>
<td>0.86</td>
<td></td>
</tr>
<tr>
<td></td>
<td>37.0</td>
<td>34.8</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Goals/Objectives</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>10.  The state CES maintains a list of current information on distance education resources (e.g., software, information sites, etc.) available from other state’s Cooperative Extension Services and other providers.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.04</td>
<td>3.13</td>
</tr>
<tr>
<td></td>
<td>1.16</td>
<td>1.22</td>
</tr>
<tr>
<td></td>
<td>37.0</td>
<td>43.3</td>
</tr>
</tbody>
</table>

| 11.  The CES makes the distance education resources (E.g., software, information sites, etc.) provided by other state’s Cooperative Extension Services and other providers available if appropriate for use by their state and field faculty in the delivery of programs. | 3.11 | 3.17 |
|                                                             | 1.19    | 1.19    |
|                                                             | 37.0    | 43.4    |

<table>
<thead>
<tr>
<th>Organizational Structure &amp; Roles</th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>4.  The CES has the distance education experts needed to assist CES faculty in acquiring the knowledge and skills needed to use distance education effectively as the teaching/learning mode for program delivery.</td>
<td>3.22</td>
<td>3.26</td>
</tr>
<tr>
<td></td>
<td>1.16</td>
<td>1.21</td>
</tr>
<tr>
<td></td>
<td>40.7</td>
<td>43.4</td>
</tr>
</tbody>
</table>

| 14.  To assure that the goals of programs that use distance education methods are achieved, a plan is in place for the continuous support of the faculty and staff involved in distance education. | 3.15 | 3.17 |
|                                                             | 1.20    | 1.23    |
|                                                             | 39.7    | 39.1    |

<table>
<thead>
<tr>
<th>Policies and Procedures</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>5.  The CES has the instructional technology in place that its faculty needs for the delivery of programs by distance education.</td>
<td>3.52</td>
<td>3.57</td>
</tr>
<tr>
<td></td>
<td>0.93</td>
<td>1.04</td>
</tr>
<tr>
<td></td>
<td>51.8</td>
<td>52.1</td>
</tr>
</tbody>
</table>
Table 2 (continued)

<table>
<thead>
<tr>
<th>PLANNING</th>
<th>Mean Standard Deviation Frequency ( % for 4 &amp; 5)</th>
<th>Round-1</th>
<th>Round-2</th>
</tr>
</thead>
<tbody>
<tr>
<td>9. Continuous funding for distance education is at a level that indicates</td>
<td>3.08 1.06 38.6</td>
<td>3.04</td>
<td>34.8</td>
</tr>
<tr>
<td>the CES’s commitment to deliver programs via distance education.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. An equal reward or incentive system exists for faculty who use</td>
<td>3.33 1.27 37.0</td>
<td>3.43</td>
<td>39.1</td>
</tr>
<tr>
<td>distance education delivery and/or traditional delivery modes.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33. Local CES resources are adequate and accessible to potential</td>
<td>2.92 1.13 26.9</td>
<td>3.05</td>
<td>31.8</td>
</tr>
<tr>
<td>distance education participants.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Management

<table>
<thead>
<tr>
<th>Management</th>
<th>Mean Standard Deviation Frequency ( % for 4 &amp; 5)</th>
<th>Round-1</th>
<th>Round-2</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. The CES has a planned continuing professional development program for</td>
<td>3.00 1.02 29.6</td>
<td>3.04</td>
<td>34.8</td>
</tr>
<tr>
<td>faculty to help them use distance education effectively in program</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>delivery.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. The CES has a system to obtain and process feedback on programs</td>
<td>3.27 1.22 42.3</td>
<td>3.52</td>
<td>52.2</td>
</tr>
<tr>
<td>delivered through distance education methods.</td>
<td></td>
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</tbody>
</table>

Linkage

<table>
<thead>
<tr>
<th>Linkage</th>
<th>Mean Standard Deviation Frequency ( % for 4 &amp; 5)</th>
<th>Round-1</th>
<th>Round-2</th>
</tr>
</thead>
<tbody>
<tr>
<td>15. The CES faculty regularly scans its environment to identify potential</td>
<td>2.96 1.19 33.3</td>
<td>3.04</td>
<td>34.7</td>
</tr>
<tr>
<td>target audiences that can best be reached via distance education.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. Needs assessments include input from clientele and stakeholders about</td>
<td>3.26 1.20 51.8</td>
<td>3.26</td>
<td>52.1</td>
</tr>
<tr>
<td>potential clientele groups and specific situations for which distance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>education modes can expand or enhance program delivery.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. The leaders of potential publics that can be effectively and</td>
<td>3.04 1.13 25.9</td>
<td>3.04</td>
<td>28.1</td>
</tr>
<tr>
<td>efficiently served through distance education are regularly identified by</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>the CES.</td>
<td></td>
<td></td>
<td></td>
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</table>
### Table 2 (continued)

<table>
<thead>
<tr>
<th>PLANNING</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Frequency ( % for 4 &amp; 5)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Round-1</td>
</tr>
<tr>
<td>19.</td>
<td>The CES establishes and maintains communication with these key leaders for the purpose of engaging them in a discussion of the educational needs of their followers that can be best met through distance education.</td>
<td>2.92</td>
<td>2.96</td>
</tr>
<tr>
<td>20.</td>
<td>The CES regularly monitors the educational needs of its distance education audiences through periodic surveys and other forms of needs assessments.</td>
<td>2.81</td>
<td>2.91</td>
</tr>
</tbody>
</table>
Design and Implementation

Design and implementation is the second sub-process of the programming model for nonformal distance education. It requires the translation of identified needs into specific designs and strategies for program implementation. There are three interrelated dimensions in this subprocess. They are the planned program, plans of action, and implementation. Results from the survey for processual tasks related to the design and implementation sub-process are shown in Tables 3 and 4 on pages 83-84.

The Planned Program

The planned program is the framework for change toward which Extension’s programs delivered via the distance mode are focused. Three processual tasks were accepted from this dimension to be included in the model. Those processual tasks included: “Educational objectives are achievable by the intended distance education participants for whom they were formulated,” “Information delivered via the distance mode is prepared through a team approach; the team includes the subject matter specialist, instructional designer, editor, and other necessary personnel,” and “The learning experiences of CES distance education participants are at least equivalent to those learning experiences afforded traditional CES program participants.”

Two processual tasks, “Learning strategies and learning activities for distance education participants are identified by CES professionals to assure the attainment of the desired educational objectives” and “Cooperative Extension System distance education program outcomes/expectations are clearly identified” had mean scores of 3.57 and 3.50 respectively but did not reach the 55% level required to reach consensus among the
experts necessary for inclusion in the model. The processual task “The needs of the distance education clientele are translated into the learner objectives as the basis for the distance education program” was rated as sometimes important (mean of 3.36), but did not reach the proposed level of importance (mean of 3.5) or consensus (55%) to be included in the model.

*Plans of Action*

The second dimension of program design and implementation are the plans of action. Two processual tasks, “Educational materials that are developed for CES distance education clientele are easily used and understood by the target learners” and “The selection of media for delivering educational programs is based on instructional effectiveness and suitability to the distance education participants,” in this dimension were rated for inclusion in the model. Experts agreed that educational materials developed for Extension programs delivered via the distance mode should be easily used and understood by the target learners and the selection of media for delivering these programs should be based on instructional effectiveness and suitability to the distance education participants. The processual task “The CES through its planned programs for distance education publics, selects the most appropriate distance education methods for responding to the educational needs of these audiences” was rated as sometimes important (Mean of 3.26) and was not considered for inclusion in the model.

*Implementation*

Processual tasks accepted in this dimension included, “Responses obtained by evaluating distance education programs are used to revise these programs and feedback
from distance education participants is used by CES faculty to ensure that teaching-
learning activities attain the results desired by the participants” and “Responses obtained
by evaluating distance education programs are used to revise these programs”.

The processual task relating to marketing plans, “A plan is used to publicize and
promote CES programs delivered via distance education to potential distance education
clientele and other interested publics” had a mean score of 3.50 but did not attain the 55%
of responses in the usually or always important category necessary to demonstrate
consensus, from the final panel of experts, to be considered for inclusion in the final
model. Processual tasks, “A follow-up evaluation system is used to measure the outcomes
achieved by distance education participants” and “Cooperative Extension System distance
educators carefully monitor educational activities of distance education participants did
not attain mean scores (3.45 and 3.36 respectively) or a 55% rating of 4 or 5 to show
consensus among the panel for inclusion in the final model.
Table 3  Accepted Processual Tasks for the Design and Implementation Subprocess

<table>
<thead>
<tr>
<th>DESIGN AND IMPLEMENTATION</th>
<th>Mean</th>
<th>Round-1</th>
<th>Round-2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Standard Deviation</td>
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<tr>
<td></td>
<td>Frequency ( % for 4 &amp; 5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Planned Program</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22. Educational objectives are achievable by the intended distance education participants for whom they were formulated.</td>
<td>3.67</td>
<td>3.78</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.96</td>
<td>0.95</td>
<td></td>
</tr>
<tr>
<td></td>
<td>55.5</td>
<td>60.9</td>
<td></td>
</tr>
<tr>
<td>23. Information delivered via the distance mode is prepared through a team approach; the team includes the subject matter specialist, instructional designer, editor, and other necessary personnel.</td>
<td>3.48</td>
<td>3.52</td>
<td></td>
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<tr>
<td></td>
<td>1.09</td>
<td>1.09</td>
<td></td>
</tr>
<tr>
<td></td>
<td>55.5</td>
<td>60.8</td>
<td></td>
</tr>
<tr>
<td>32. The learning experiences of CES distance education participants are at least equivalent to those learning experiences afforded traditional CES program participants.</td>
<td>3.62</td>
<td>3.59</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.02</td>
<td>1.01</td>
<td></td>
</tr>
<tr>
<td></td>
<td>65.4</td>
<td>72.7</td>
<td></td>
</tr>
<tr>
<td>Plans of Action</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30. Educational materials that are developed for CES distance education clientele are easily used and understood by the target learners.</td>
<td>3.85</td>
<td>3.82</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.83</td>
<td>0.91</td>
<td></td>
</tr>
<tr>
<td></td>
<td>57.7</td>
<td>63.6</td>
<td></td>
</tr>
<tr>
<td>35. The selection of media for delivering educational programs is based on instructional effectiveness and suitability to the distance education participants.</td>
<td>3.58</td>
<td>3.68</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.86</td>
<td>0.84</td>
<td></td>
</tr>
<tr>
<td></td>
<td>57.7</td>
<td>63.6</td>
<td></td>
</tr>
<tr>
<td>Implementation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28. Responses obtained by evaluating distance education programs are used to revise these programs.</td>
<td>3.52</td>
<td>3.67</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.08</td>
<td>1.02</td>
<td></td>
</tr>
<tr>
<td></td>
<td>52.0</td>
<td>61.9</td>
<td></td>
</tr>
<tr>
<td>34. Feedback from distance education participants is used by CES faculty to ensure that teaching-learning activities attain the results desired by the participants.</td>
<td>3.58</td>
<td>3.64</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.86</td>
<td>0.90</td>
<td></td>
</tr>
<tr>
<td></td>
<td>50.0</td>
<td>54.6</td>
<td></td>
</tr>
</tbody>
</table>
Table 4  Rejected Processual Tasks for the Design and Implementation Subprocess

<table>
<thead>
<tr>
<th>DESIGN AND IMPLEMENTATION</th>
<th>Mean Standard Deviation</th>
<th>Round-1</th>
<th>Round-2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency ( % for 4 &amp; 5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Planned Program</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24. Learning strategies and learning activities for distance education participants are identified by CES professionals to assure the attainment of the desired educational objectives.</td>
<td>3.48 1.09</td>
<td>3.57 1.08</td>
<td>47.0 47.8</td>
</tr>
<tr>
<td>25. The needs of the distance education clientele are translated into the learner objectives as the basis for the distance education program.</td>
<td>3.27 1.26</td>
<td>3.36 1.29</td>
<td>42.3 45.5</td>
</tr>
<tr>
<td>39. Cooperative Extension System distance education program outcomes/expectations are clearly identified.</td>
<td>3.46 1.10</td>
<td>3.50 1.06</td>
<td>46.2 45.4</td>
</tr>
<tr>
<td>Plans of Action</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21. The CES through it’s planned programs for distance education publics, selects the most appropriate distance education methods for responding to the educational needs of these audiences.</td>
<td>3.22 1.28</td>
<td>3.26 1.25</td>
<td>37.0 34.8</td>
</tr>
<tr>
<td>Implementation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31. A follow-up evaluation system is used to measure the outcomes achieved by distance education participants.</td>
<td>3.27 1.00</td>
<td>3.45 0.96</td>
<td>42.3 50.0</td>
</tr>
<tr>
<td>36. A plan is used to publicize and promote CES programs delivered via distance education to potential distance education clientele and other interested publics.</td>
<td>3.46 1.07</td>
<td>3.50 1.01</td>
<td>50.0 50.0</td>
</tr>
<tr>
<td>38. Cooperative Extension System distance educators carefully monitor educational activities of distance education participants.</td>
<td>3.27 1.08</td>
<td>3.36 1.05</td>
<td>38.5 45.4</td>
</tr>
</tbody>
</table>
Evaluation and Accountability

There were six processual tasks under the evaluation and accountability subprocess, which is the third stage in the programming model for nonformal distance education. Four of those processual tasks were accepted, with mean scores of 3.64 or higher and 59% or more of the final panel rated usually or always important (Table 5). The processual task, “Cooperative Extension distance educators revise instructional strategies used in distance education delivery based on feedback obtained from distance education participants and through other evaluation tools,” had the highest mean score indicating that the experts felt that it was very important that Extension distance educators revise instructional strategies based on feedback obtained from distance education participants and through other evaluation tools. They also felt that “Cooperative Extension distance educators develop and implement evaluation plans to measure outcomes,” “CES’s distance education program effectiveness is determined in terms of measurable outcomes/expectations,” and “Results of the evaluations of CES distance education programs are reported to the appropriate stakeholders, such as the learners themselves, program partners, and sources of support, in a manner that can be easily understood” should be included in the final model.

The processual tasks not included, “Time, materials, and other costs, resources, and inputs to CES distance education programs are clearly identified and can be used in assessments of cost-effectiveness” and “The policies, procedures, and activities related to CES distance education programs are continually reviewed and revised if necessary were each rated sometimes important with mean scores of 3.41 and 3.45 respectively (Table 6).
Table 5  Accepted Processual Tasks for the Evaluation and Accountability Subprocess

<table>
<thead>
<tr>
<th>EVALUATION AND ACCOUNTABILITY</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Frequency ( % for 4 &amp; 5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Round-1</td>
<td></td>
<td></td>
<td>Round-2</td>
</tr>
<tr>
<td>40. CES distance education program effectiveness is determined in terms of measurable outcomes/ expectations.</td>
<td>3.58</td>
<td>3.68</td>
<td>0.99</td>
</tr>
<tr>
<td>41. Cooperative Extension distance educators develop and implement evaluation plans to measure outcomes.</td>
<td>3.54</td>
<td>3.64</td>
<td>1.03</td>
</tr>
<tr>
<td>42. Cooperative Extension distance educators revise instructional strategies used in distance education delivery based on feedback obtained from distance education participants and through other evaluation tools.</td>
<td>3.73</td>
<td>3.80</td>
<td>0.78</td>
</tr>
<tr>
<td>46. Results of the evaluations of CES distance education programs are reported to the appropriate stakeholders, such as the learners themselves, program partners, and sources of support, in a manner that can be easily understood.</td>
<td>3.50</td>
<td>3.64</td>
<td>1.21</td>
</tr>
</tbody>
</table>

Table 6. Rejected Processual Tasks for the Evaluation and Accountability Subprocess

<table>
<thead>
<tr>
<th>EVALUATION AND ACCOUNTABILITY</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Frequency ( % for 4 &amp; 5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Round-1</td>
<td></td>
<td></td>
<td>Round-2</td>
</tr>
<tr>
<td>43. Time, materials, and other costs, resources and inputs to CES distance education programs are clearly identified and can be used in assessments of cost-effectiveness.</td>
<td>3.27</td>
<td>3.41</td>
<td>1.08</td>
</tr>
<tr>
<td>44. The policies, procedures, and activities related to CES distance education programs are continually reviewed and revised if necessary.</td>
<td>3.35</td>
<td>3.45</td>
<td>1.16</td>
</tr>
</tbody>
</table>
**Cronbach’s alpha coefficients**

In order to determine the internal consistency reliability of the model, Cronbach’s alpha was used. Cronbach’s alpha is defined by Jaeger (1993, p.369) as “A formula for estimating the internal consistency reliability of a measurement instrument. Cronbach’s alpha uses data collected during a single administration of a measurement instrument, and can be used with instruments that have items with scores that fall into more than two categories (e.g., five point scales).” This measure provided an index of the unidimensionality of the measures being used. These Cronbach’s alpha coefficients helped the researcher to determine if the items in the model were measuring the same underlying variables or factors (R. Pitman personal communication April 22, 2004). In this case these would be the subprocesses; planning, design and implementation, and evaluation and accountability.

Nunnally (1967, p.226) declared that for basic research “reliabilities of 0.50 to 0.60 will suffice and reliabilities above 0.80 are wasteful.” He went on to state that for applied research coefficients of 0.90 would be a minimum and 0.95 or above would be a more desirable standard. Asher (1976) stated that reliability increased with increased quality of items being measured and with increases in the number of items.

The Cronbach’s alpha coefficients of the subprocesses in this study were; planning = 0.9695, design and implementation = 0.9574, and evaluation and accountability = 0.9312. The first two subprocesses exceeded the more desirable 0.95 coefficient and the third, evaluation and accountability exceeded the 0.90 minimum for applied research. These coefficients indicated a high level of internal consistency and reliability.
Dalkey (1972) indicated that the reliability of group responses increase as the size of the group increases. A panel of 15 experts from a particular field would be large enough to provide reliable results according to Martino (1972). The 27 participants of the expert panel who participated in this study were adequate to insure reliability.

**Summary of Survey Results**

Twenty-one of the processual tasks proposed were accepted by the panel of Cooperative Extension distance education experts for inclusion in the final model. These 21 processual tasks met the criteria of a mean score of 3.5 and 55% of the ratings being either always or usually important (Table 7). Thirty-eight of the items included in the instrument had higher mean scores in the second round, two remained unchanged, and five had a lower mean scores.

The percentage of frequency of scores indicating usually or always important increased in 36 of the 46 items, decreased in nine, and remained unchanged in one. The standard deviation remained unchanged or decreased in 29 of the 46 proposed processual tasks which demonstrates that there was some convergence of opinion among the panel of experts.

Cronbach’s alpha indicated that there was a strong internal consistency in the model and suggested that the items were clustering around the three dimensions of planning, design and implementation, and evaluation and accountability. These high alpha coefficients and the number of participants involved in the study led the researcher to conclude that the model was reliable.
Summary

There are three major components in the programming model for nonformal distance education in the Cooperative Extension Service. These include; (a) planning, (b) design and implementation, and (c) evaluation and accountability.

The first of these subprocesses is planning. It involves the organization’s maintenance and renewal and the need for its faculty to understand and commit to the mission, philosophy, and objectives of the organization. Faculty roles need to be defined and tied to the distance education program objectives but they must remain within the established policies and procedures set forth by the organization. These policies need to clearly communicated and a thorough understanding of and a commitment to these policies must be developed. The administration and managers must be committed to the application of sound principles of adult and youth education. In practice the educator must consider each of the systems involved in the educational intervention. These would include the people such as the students, the faculty and staff, and the stakeholders. Other considerations should be to the quality of materials and program offerings, the source of funding, and the available facilities. Lastly, attention should be given during the planning subprocess to linking the planned program to the community, its publics, learners, and other relevant stakeholders.

The second of these subprocesses is the design and implementation of the planned programs delivered via the distance mode. The planned programs are designed to include measurable and achievable objectives. These programs are designed using a team approach including subject matter specialists, instructional designers, editors, and other
personnel as needed and are intended to provide learning experiences that are equivalent to those offered via traditional delivery modes. Plans of action should include information that is easy to use and understand and delivery media should be selected based on effectiveness and suitability to the target audience. Implementation plans should be made that utilize the evaluation responses from participants and other sources to revise and improve the program and to insure that participants attain the desired results.

The final of the three subprocesses is evaluation and accountability. This subprocess is necessary to assure that the learners and the programs delivered via the distance mode are having the desired outcomes. Evaluation and accountability plans should include action steps to measure outcomes and determine the program’s effectiveness in terms of these outcomes. The inputs and outputs need to be clearly assessed so that steps can be taken to revise instructional strategies and delivery strategies based on these measures. Accountability allows the evaluation results, of the programs delivered via the distance mode, to be reported to appropriate stakeholders.
Table 7 Processual Tasks Included in the Adapted Conceptual Programming Model

<table>
<thead>
<tr>
<th><strong>Planning</strong></th>
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<tbody>
<tr>
<td>The organization and its renewal processes:</td>
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<tr>
<td><strong>Mission and philosophy</strong></td>
</tr>
<tr>
<td>Cooperative Extension administrators, faculty, and support personnel at all levels are committed to using distance education methods when they are the appropriate teaching/learning mode.</td>
</tr>
<tr>
<td>The programming process used by the CES in planning, designing and implementing, and evaluating its programs recognizes and includes distance education as an appropriate and effective teaching/learning mode for program delivery.</td>
</tr>
<tr>
<td>The CES encourages the use of distance education resources provided by other states Cooperative Extension Services and other credible providers if appropriate by their state and field faculty in the delivery of programs.</td>
</tr>
<tr>
<td>The Cooperative Extension System educators apply sound principles of nonformal adult and youth education as appropriate in facilitating learning among distance education participants were each accepted by the final panel.</td>
</tr>
<tr>
<td><strong>Objectives</strong></td>
</tr>
<tr>
<td>The goals of the CES illustrate the importance of distance education as an educational delivery mode.</td>
</tr>
<tr>
<td><strong>Policies and Procedures</strong></td>
</tr>
<tr>
<td>The quality of information for learning offered via the distance education mode is at least equivalent to information offered via traditional CES methods.</td>
</tr>
<tr>
<td>The Cooperative Extension System distance education programs are designed to minimize barriers that limit target learners participation.</td>
</tr>
<tr>
<td>The clientele involved in programs delivered via distance education have access to CES professionals equivalent to the access available to traditional program participants.</td>
</tr>
<tr>
<td>Educational resources provided to CES distance education participants are at least equivalent to those materials provided to participants of traditional CES delivery systems were usually or always important in programming for non formal distance education.</td>
</tr>
<tr>
<td><strong>Linking the organization to its publics:</strong></td>
</tr>
<tr>
<td><strong>Linkage</strong></td>
</tr>
<tr>
<td>The CES is involved in identifying agencies, organizations, and groups that have a stake or interest in Extension’s distance education programs.</td>
</tr>
</tbody>
</table>
Table 7 (continued)

**Design and Implementation**

**The Planned Program**

Educational objectives are achievable by the intended distance education participants for whom they were formulated.

Information delivered via the distance mode is prepared through a team approach; the team includes the subject matter specialist, instructional designer, editor, and other necessary personnel.

The learning experiences of CES distance education participants are at least equivalent to those learning experiences afforded traditional CES program participants.

**Plans of Action**

Educational materials that are developed for CES distance education clientele are easily used and understood by the target learners.

The selection of media for delivering educational programs is based on instructional effectiveness and suitability to the distance education participants.

**Implementation**

Responses obtained by evaluating distance education programs are used to revise these programs.

Feedback from distance education participants is used by CES faculty to ensure that teaching-learning activities attain the results desired by the participants and that responses obtained by evaluating distance education programs are used to revise these programs.

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**Evaluation and Accountability**

Cooperative Extension distance educators revise instructional strategies used in distance education delivery based on feedback obtained from distance education participants and through other evaluation tools.

Cooperative Extension distance educators develop and implement evaluation plans to measure outcomes.

CES’s distance education program effectiveness is determined in terms of measurable outcomes/expectations.

Results of the evaluations of CES distance education programs are reported to the appropriate stakeholders, such as the learners themselves, program partners, and sources of support, in a manner that can be easily understood.
CHAPTER 5
Conclusions, Implications, and Recommendations

Introduction

The Cooperative Extension Service has long been a provider of nonformal adult education to the citizens of the United States. In order to reach these publics in an efficient and easily accessible manner, with research-based information, early practitioners adopted flat media and mass media techniques. With the rapid development of emerging instructional technology and diminishing resources, Extension has the opportunity to increase efficiency and to improve the quality of programs delivered through the adoption of additional distance learning delivery. The purpose of this study was to adapt the conceptual programming model so that it might be used for planning, designing and implementing, and evaluating and accounting for Extension programs delivered via the distance mode. Findings from the study and a review of the related literature led to the conclusions, implications, and recommendations that are presented in this chapter.

Extension professionals responsible for nonformal distance education from 11 of 12 states representing all four extension regions, major program areas, and rural, urbanizing, and urban states participated in this study. The Delphi technique was used to identify and adapt processual tasks that they believed were essential to the programming model for nonformal programs delivered via the distance mode in the Cooperative Extension Service.
Basic concepts and processual tasks found in the literature guided the researcher and provided direction for the inquiry. These concepts included; Zetterburg’s (1962) steps for model building which were used as a procedure to guide the inquiry and Boone’s (1985) conceptual programming model which provided the framework and structure anchored in social theory on which the inquiry was based. The processual tasks identified in Boone’s (1985) model were used in providing a basis for adapting a tentative conceptual programming model for nonformal distance education delivery. The processual tasks of the model were then revised utilizing the information gathered from the literature, discussions with distance education experts and providers of distance education, and the researcher’s advisory committee.

Nine distance education experts participated in reviewing and adapting the adapted model. The adapted model was then submitted to a final panel of experts who gave their opinion of the relative importance of each processual task for the programming model during two rounds of a Delphi study. Twenty-seven panelists from 11 states participated in the first round and 23 completed round two. Twenty-one of the 46 processual tasks were accepted by this final panel. Only two of the 46 items had mean scores less than 3.00, indicating that the experts believed all of the processual tasks were of importance.

**Conclusions and Implications**

Conclusion 1. The conceptual programming model provides a framework that guides the programming efforts of the Cooperative Extension Services administration, faculty, and field personnel.
Implications- To increase its relevance and expand its use additional modifications that accent emerging distance education technology have to be highlighted and become an integral part of the programming model. As the understanding of distance education grows a greater integration of distance education concepts needs to occur. This implies that a greater understanding of distance education programming can lead to a more effective integration of distance education delivery into the programming process.

Conclusion 2. The mission and goals of the organization need to be reexamined to determine the whether they need to be revised in order to accent the use of distance education as a delivery mode for planned programs.

Implications- Distance education needs to be an integral part of the mission, philosophy, and goals of the Cooperative Extension Service. The use of distance education methodology needs to made explicit. The policies and procedures of the organization must reflect the relevance and necessity to deliver programs via the distance mode. Goals and policies may be the area where more specific changes need to occur.

Conclusion 3. Extension needs to have a dynamic training program that focuses on helping to keep state and field based faculty abreast of emerging delivery technologies and the use of the conceptual programming model.

Implications- The effectiveness of learning experiences via distance delivery requires the involvement of a multi disciplinary team in the design of the planned program committed to quality programming. Sound principles of adult education need to be utilized. It is the responsibility of the faculty to understand the use of feedback and
evaluation in order to participate in design teams rather than working in isolation. This requires the provision for training in programming concepts and teamwork.

Conclusion 4. Distance education delivery requires the involvement of audiences and other relevant stakeholders that may not have been involved with Extension programs in the past.

Implications- Effective distance programming requires appropriate selection of cost-effective materials and delivery methods based on the target publics needs. As these needs are identified new audiences are going to emerge. The needs of these audiences need to be accessed using sound principles of adult education. The adult educator must understand the barriers associated with these new audiences in order to reduce them.

Conclusion 5. Cooperative Extension must commit and make available the resources for support of programs delivered via the distance mode.

Implications- The structure and processes of the Cooperative Extension Services must be organized in a manner that makes expertise available for the utilization of emerging technologies. Extension should encourage the use of resources made available by other states and other credible providers of distance education. An example would be where an institution does not provide incentives, resources, or rewards to distance education faculty that are equal to those provided to faculty using more traditional programming methods. In this instance an effort could be made by the administrative unit to provide a more equitable level of support.
Recommendations

Based on the findings of the study the following recommendations for practice and recommendations for further research are made.

1. Field testing of the conceptual programming model should be done in order to validate and further refine it for use in distance delivery of Cooperative Extension planned programs.

2. Programming is a dynamic process and as emerging technologies become available, further adaptation of the conceptual programming model needs to be made.

3. Training needs to be provided for administrators, managers, supervisors, and faculty in the use of the conceptual programming model and distance education delivery.

4. Cooperative Extension Service leaders can use the results of this study to examine the programming process used for distance delivery of planned programs in their organizations.

5. The management system utilized by the Cooperative Extension Service should include an incentive system for rewarding Extension faculty who are effectively using distance education for the delivery of planned programs.

6. An assessment should be made of the distance education methodologies that the specialists and field faculty are presently utilizing in the delivery of planned programs via new and emerging distance education technology.
LIST OF REFERENCES


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Iams, D. R., & Marion, M. H. (1991). Reactions to alternative delivery methods: Cost effective environmental education options. [Electronic Version]. *Journal of Extension, 29*(2) feature 2 Available E-mail: almanac@joe.ext.vt.edu Message:

send joe summer 1991 feature 2.


Available E-mail: almanac@joe.ext.vt.edu Message: send joe December 1995 research 1.


Appendix A
Tentative Model
PRELIMINARY SURVEY OF THE PROGRAMMING MODEL FOR NONFORMAL
DISTANCE EDUCATION PROGRAMS IN THE
COOPERATIVE EXTENSION SYSTEM

Name:______________________________________________

State:____________________________________________

Number of Cooperative Extension System (CES) professionals in your state:_____ 

Your area of programming responsibility: [ ALL THAT APPLY ]                     

Staff / Organizational Development: _____
Administration: _____
Family and Consumer Sciences: _____
Agriculture: _____
4-H: _____
Community Development: _____

Years in Cooperative Extension System _____
Years in Current Position _____

Gender:  Female _____  Male _____

Directions: Please rate the importance of the statements as considerations for elements in planning, designing and implementing, and evaluating distance education programs in the your state Cooperative Extension System. Please place Brackets, [ ], around the number following each statement that best describes your response.

Example: 1=Never  2=Seldom  3=Sometimes  4=Usually  5=Always
         Important  Important  Important  Important  Important

0. The Cooperative Extension System is committed to making educational opportunities available to publics statewide insofar as its mission and resources permit.

In this example, the rating is 4.

Comments or revisions:______________________________________________________
1. Distance education is recognized as an important delivery system for disseminating research-based information in the mission of the Cooperative Extension System (CES).

Comments or revisions:

2. The goals of the CES accentuate the importance of distance education as an educational delivery mode.

Comments or revisions:

3. Cooperative Extension System administrators, faculty, and support staff are committed to the use of distance when appropriate for the delivery of their programs.

Comments or revisions:

4. The CES has a distance education support staff that possesses the technical expertise required to assist CES faculty in acquiring the knowledge and skills needed to use distance education instructional methods in the delivery of its programs.

Comments or revisions:

5. The CES possesses the educational instructional technology that its faculty needs in the delivery of those aspects of programs that are appropriate to distance education.

Comments or revisions:

6. The CES has a planned continuing professional development programs for its staff that focus on how to use distance education effectively in the delivery of programs.

Comments or revisions:
7. A system is used to obtain feedback on the results of CES programs delivered through distance education that allows for appropriate changes in the organization to be made.

Comments or revisions:

8. The programming process used by the CES in planning, designing and implementing, and evaluating its programs incorporates distance education as an appropriate and effective delivery system.

Comments or revisions:

9. Funding for distance education reflects the CES’s commitment to distance education for delivering programs.

Comments or revisions:

10. The state CES maintains current information on distance education resources (e.g. software, information sites, etc.) available from other state’s Cooperative Extension Services and other credible providers.

Comments or revisions:

11. The CES makes the distance education resources (e.g. software, information sites, etc.) provided by other state’s Cooperative Extension Services and other credible providers available as appropriate to both state and field faculty in the delivery of programs.

Comments or revisions:
<p>| 12. | The CES encourages appropriate use of distance education resources provided by other state’s Cooperative Extension Services and other credible providers by both state and field faculty in the delivery of programs. | 1 | 2 | 3 | 4 | 5 |
| 13. | A reward and incentive system exists for distance education faculty who use the distance education delivery mode that is equivalent to that provided for traditional CES delivery modes. | 1 | 2 | 3 | 4 | 5 |
| 14. | To assure that the goals of programs that using distance education methods are achieved, a plan is in place for the continuous supervision of the faculty and staff involved in distance education. | 1 | 2 | 3 | 4 | 5 |
| 15. | The CES continually scans its environment to identify potential target publics that need to be accessed via distance education. | 1 | 2 | 3 | 4 | 5 |
| 16. | Needs assessments include input from clientele and stakeholders about clientele groups for which distance education modes can expand program delivery. | 1 | 2 | 3 | 4 | 5 |
| 17. | The CES is continuously involved in identifying agencies, organizations, and groups which have a stake or interest in it’s distance education programs. | 1 | 2 | 3 | 4 | 5 |</p>
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<tbody>
<tr>
<td>18. The leaders of potential publics that can be better served through distance education are identified by the CES.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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<td>Comments or revisions:</td>
<td>5</td>
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<tr>
<td>19. The CES establishes and maintains communication with these leaders for the purpose of engaging them in a discussion of the educational needs of their followers.</td>
<td>1</td>
<td>2</td>
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<td>Comments or revisions:</td>
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<tr>
<td>20. The CES constantly monitors the educational needs of its distance education publics through periodic surveys and other needs assessments of these publics.</td>
<td>1</td>
<td>2</td>
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<td>Comments or revisions:</td>
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<td></td>
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<td>21. The CES through its planned programs for distance education publics, selects the most appropriate distance education methods for responding to the educational needs of these publics.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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<td>Comments or revisions:</td>
<td>5</td>
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<td>22. Educational objectives are within the capabilities of the intended distance education participants for whom they were formulated.</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>Comments or revisions:</td>
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<tr>
<td>23. Research based information offered via the distance mode is prepared through a team approach; the team includes the subject matter specialist, instructional designer, editor, and other necessary personnel.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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<td>Comments or revisions:</td>
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24. Learning strategies and learning activities for distance education participants are identified by CES professionals to assure the attainment of the desired educational objectives and experiences.

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Comments or revisions:

25. The needs of the distance education clientele are translated into the objectives of the distance education program.

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<td>4</td>
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Comments or revisions:

26. The standard and quality of information offered via the distance education mode is equivalent to information offered via traditional CES methods.

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Comments or revisions:

27. Clientele involved in programs delivered via distance education have access to CES professionals equal to that of traditional program participants.

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Comments or revisions:

28. Findings obtained from evaluating distance education programs are used to revise the programs and for their renewal processes.

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Comments or revisions:

29. Informational materials provided to CES distance education participants is equivalent to those materials provided to participants of traditional CES delivery systems.

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Comments or revisions:
|   |   |   |   |   |   
|---|---|---|---|---|---
| 30. | A follow-up system is used to evaluate distance education participants’ achievements. | 1 | 2 | 3 | 4 | 5 |
| Comments or revisions: |   |   |   |   |   |
| 31. | The learning experiences of CES distance education participants is equivalent to traditional CES program participants’ learning experiences. | 1 | 2 | 3 | 4 | 5 |
| Comments or revisions: |   |   |   |   |   |
| 32. | Local CES resources are adequate and accessible to potential distance education participants. | 1 | 2 | 3 | 4 | 5 |
| Comments or revisions: |   |   |   |   |   |
| 33. | Feedback from distance education participants is used by CES faculty to ensure that teaching-learning activities attain the desired results. | 1 | 2 | 3 | 4 | 5 |
| Comments or revisions: |   |   |   |   |   |
| 34. | Media for delivering educational materials are based on their instructional effectiveness and suitability to the distance education participants. | 1 | 2 | 3 | 4 | 5 |
| Comments or revisions: |   |   |   |   |   |
| 35. | Educational materials that are developed for CES distance education clientele use simple, direct, and meaningful language. | 1 | 2 | 3 | 4 | 5 |
| Comments or revisions: |   |   |   |   |   |
| 36. | A plan is used to market CES programs delivered via distance education to potential distance education clientele and other interested publics. | 1 | 2 | 3 | 4 | 5 |
| Comments or revisions: |   |   |   |   |   |
37. Cooperative Extension System distance education programs are designed to minimize barriers that discourage adults participation.

Comments or revisions:

38. Cooperative Extension System distance educators continually monitor educational activities of distance education participants.

Comments or revisions:

39. Cooperative Extension System distance education program outcomes are clearly identified.

Comments or revisions:

40. Identified CES distance education program outcomes can be measured.

Comments or revisions:

41. Identified formative and summative evaluations are used in evaluating CES distance education programs.

Comments or revisions:

42. Cooperative Extension System distance educators and administrators participate in the development and implementation of evaluation plans to evaluate outcomes and experiences of distance education participants.

Comments or revisions:

43. Cooperative Extension distance educators adapt and redesign instructional strategies used in distance education delivery as they monitor strategies and receive feedback and as their observations indicate the need for such change.

Comments or revisions:
44. Time, materials, and other costs, resources, and inputs to CES distance education programs are clearly identified and assessed.

Comments or revisions:

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45. The policies, procedures, and activities related to CES distance education programs are continually reviewed.

Comments or revisions:

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46. Cooperative Extension System distance education uses sound principles of adult education in facilitating learning among distance education participants.

Comments or revisions:

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</table>

47. Results of the evaluations of CES distance education programs are reported to the appropriate parties in a manner that can be easily interpreted.

Comments or revisions:

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
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</tr>
</thead>
</table>
Appendix B
Preliminary Panel of Experts
List of Preliminary Panel

Dr. Patrick Borich
CSREES
921 Bayless AVE.
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Dr. Rick Foster
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Blacksburg, VA 2406 - 0402

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Mississippi State, MS 39762

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INTERgeneration LINKS
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Arlington, VA 2201
Appendix C
Round -1 Questionnaire
PRELIMINARY SURVEY OF THE PROGRAMMING MODEL FOR NONFORMAL DISTANCE EDUCATION PROGRAMS IN THE COOPERATIVE EXTENSION SYSTEM

Name:___________________________________________
State:___________________________________________
Number of Cooperative Extension System (CES) professionals in your state:____

Your area of programming responsibility: [ X ALL THAT APPLY ]

Staff / Training and Development: _____
Administration: _____
Family and Consumer Sciences: _____
Agriculture: _____
4-H: / Youth Development): _____
Community Development: _____

Years in Extension: _____
Years in Current Job Role: _____
Sex: Female _____ Male _____

Directions: Please rate the importance of the statements as considerations for elements in planning, designing and implementing, and evaluating distance education programs in your state Cooperative Extension System. Please place Brackets, [ ], around the number following each statement that best describes your response.

Example: 1=Never 2=Seldom 3=Sometimes 4=Usually 5=Always

Important Important Important Important Important

0. The Cooperative Extension System is committed to making educational opportunities available to publics statewide insofar as its mission and resources permit.

In this example, the rating is 4.
1. Distance education is recognized throughout the Cooperative Extension Service (CES) as an important delivery strategy for disseminating research-based information.

2. The goals of the CES illustrate the importance of distance education as an educational delivery mode.

3. Cooperative Extension administrators, faculty, and support personnel at all levels are committed to using distance education methods when they are the appropriate teaching/learning mode.

4. The CES has the distance education experts needed to assist CES faculty in acquiring the knowledge and skills needed to use distance education effectively as the teaching/learning mode for program delivery.

5. The CES has the instructional technology in place that its faculty needs for the delivery of programs by distance education.

6. The CES has a planned continuing professional development program for faculty to help them use distance education effectively in program delivery.
7. The CES has a system to obtain and process feedback on programs delivered through distance education methods.

8. The programming process used by the CES in planning, designing and implementing, and evaluating its programs recognizes and includes distance education as an appropriate and effective teaching/learning mode for program delivery.

9. Current funding for distance education is an indication of the CES’s commitment to deliver programs via distance education.

10. The state CES maintains a list of current information on distance education resources (e.g. software, information sites, etc.) available from other state’s Cooperative Extension Services and other providers.

11. The CES makes the distance education resources (e.g. software, information sites, etc.) provided by other state’s Cooperative Extension Services and other providers available if appropriate for use by their state and field faculty in the delivery of programs.

12. The CES encourages the use of distance education resources provided by other state’s Cooperative Extension Services and other credible providers if appropriate by their state and field faculty in the delivery of programs.
13. A reward or incentive system that is equal exists for faculty who use the distance education delivery and/or traditional delivery modes.

14. To assure that the goals of programs that use distance education methods are achieved, a plan is in place for the continuous support of the faculty and staff involved in distance education.

15. The CES faculty regularly scans its environment to identify potential target audiences that can best be reached via distance education.

16. Needs assessments include input from clientele and stakeholders about potential clientele groups and specific situations for which distance education modes can expand or enhance program delivery.

17. The CES is involved in identifying agencies, organizations, and groups that have a stake or interest in Extension’s distance education programs.

18. The leaders of potential publics that can be effectively and efficiently served through distance education are regularly identified by the CES.
|   |   |   |   |   |   |
|---|---|---|---|---|
| 19. | The CES establishes and maintains communication with these key leaders for the purpose of engaging them in a discussion of the educational needs of their followers that can be best met through distance education. | 1 | 2 | 3 | 4 | 5 |
| 20. | The CES regularly monitors the educational needs of its distance education audiences through periodic surveys and other forms of needs assessments. | 1 | 2 | 3 | 4 | 5 |
| 21. | The CES through its planned programs for distance education publics, selects the most appropriate distance education methods for responding to the educational needs of these audiences. | 1 | 2 | 3 | 4 | 5 |
| 22. | Educational objectives are achievable by the intended distance education participants for whom they were formulated. | 1 | 2 | 3 | 4 | 5 |
| 23. | Information delivered via the distance mode is prepared through a team approach; the team includes the subject matter specialist, instructional designer, editor, and other necessary personnel. | 1 | 2 | 3 | 4 | 5 |
| 24. | Learning strategies and learning activities for distance education participants are identified by CES professionals to assure the attainment of the desired educational objectives. | 1 | 2 | 3 | 4 | 5 |
25. The needs of the distance education clientele are translated into the learner objectives as the basis for the distance education program.

26. The quality of experiences for learning offered via the distance education mode is at least equivalent to information offered via traditional CES methods.

27. Clientele involved in programs delivered via distance education have access to CES professionals equivalent to the access available to traditional program participants.

28. Responses obtained by evaluating distance education programs are used to revise these programs.

29. Educational resources provided to CES distance education participants are at least equivalent to those materials provided to participants of traditional CES delivery systems.

30. Educational materials that are developed for CES distance education clientele are easy to use and understood by the target learners.

31. A follow-up evaluation system is used to measure the outcomes achieved by distance education participants.
<p>| | | | | |</p>
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<tr>
<td>32.</td>
<td>The learning experiences of CES distance education participants are at least equivalent to those afforded traditional CES program participants’ learning experiences.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>33.</td>
<td>Local CES resources are adequate and accessible to potential distance education participants.</td>
<td>1</td>
<td>2</td>
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</tr>
<tr>
<td>34.</td>
<td>Feedback from distance education participants is used by CES faculty to ensure that teaching-learning activities attain the desired results.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>35.</td>
<td>The selection of media for delivering educational programs is based on instructional effectiveness and suitability to the distance education participants.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>36.</td>
<td>A plan is used to publicize and promote CES programs delivered via distance education to potential distance education clientele and other interested publics.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>37.</td>
<td>Cooperative Extension System distance education programs are designed to minimize barriers that limit target learners participation.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>38.</td>
<td>Cooperative Extension System distance educators carefully monitor educational activities of distance education participants.</td>
<td>1</td>
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<tr>
<td>39.</td>
<td>Cooperative Extension System distance education program outcomes/expectations are clearly identified.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>40.</td>
<td>CES distance education program effectiveness is determined in terms of measurable outcomes/expectations.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>41.</td>
<td>Cooperative Extension distance educators develop and implement evaluation plans to measure outcomes.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>42.</td>
<td>Cooperative Extension distance educators revise instructional strategies used in distance education delivery based on feedback obtained from distance education participants and through other evaluation tools.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>43.</td>
<td>Time, materials, and other costs, resources, and inputs to CES distance education programs are clearly identified and can be used in assessments of cost-effectiveness.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>44.</td>
<td>The policies, procedures, and activities related to CES distance education programs are continually reviewed and revised if necessary.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>45.</td>
<td>Cooperative Extension System educators apply sound principles of nonformal education in facilitating learning among distance education participants.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
46. Results of the evaluations of CES distance education programs are reported to the appropriate stakeholders, such as the learners themselves, program partners, and sources of support, in a manner that can be easily understood.
Appendix D
Final Panel Of Experts
List of Final Panel

Dr. Curtis Absher
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Director Missouri 4-H Youth Development Programs  
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Columbia, MO 65211 - 3020
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bumschei@uky.edu  
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Lexington, KY 40546 - 0064
Appendix E
Tentative Model
Dear Dr.,

Earlier you completed the web based Distance Education Survey. Please take a few minutes of your time to complete the follow-up survey included as a part of this message. Click on reply, mark your response, and click send. Thanks for your time.

Sincerely,
Kenneth N. McCaskill

SURVEY OF THE PROGRAMMING MODEL FOR NONFORMAL DISTANCE EDUCATION PROGRAMS IN THE COOPERATIVE EXTENSION SYSTEM

Directions: In your earlier response you rated the importance of the following statements as considerations for elements in planning, designing and implementing, and evaluating distance education programs in your state Cooperative Extension System. Your previous rating is indicated by Brackets around the number on the line following each element. Measures of central tendency from the first analysis are listed on the next line. In order to be included in the model the element must be rated 4 or 5 by 55% of respondents and the mean must be 3.5 or greater. If you feel that a particular element should be considered included in the model or your rating differed from those of other respondents please consider changing your rating by placing Brackets, [ ], on the second set of ratings to more closely reflect that of others. If you choose to differ from the group please enter a brief explanation on the line following the new rating.

Example: 1=Never 2=Seldom 3=Sometimes 4=Usually 5=Always
Scale Important Important Important Important Important

<table>
<thead>
<tr>
<th>Example Question and Response</th>
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<tbody>
<tr>
<td>0. The Cooperative Extension System is committed to making educational opportunities available to publics statewide insofar as its mission and resources permit.</td>
</tr>
<tr>
<td>1</td>
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<tr>
<td>Mean</td>
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<tr>
<td>1</td>
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</table>

   I believe this element should be included

| 1 | 2 | 3 | 4 | 5 |
| Mean | 3.70 | Standard Deviation | .823 | Variance | .678 |
| 1 | 2 | 3 | 4 | 5 |
2. The goals of the CES illustrate the importance of distance education as an educational delivery mode.
   1. 2. 3. 4. 5
   Mean 3.74 Standard Deviation .903 Variance .815

3. Cooperative Extension administrators, faculty, and support personnel at all levels are committed to using distance education methods when they are the appropriate teaching/learning mode.
   1. 2. 3. 4. 5
   Mean 3.22 Standard Deviation .892 Variance .795

4. The CES has the distance education experts needed to assist CES faculty in acquiring the knowledge and skills needed to use distance education effectively as the teaching/learning mode for program delivery.
   1. 2. 3. 4. 5
   Mean 3.22 Standard Deviation 1.155 Variance 1.333

5. The CES has the instructional technology in place that its faculty needs for the delivery of programs by distance education.
   1. 2. 3. 4. 5
   Mean 3.52 Standard Deviation .935 Variance .875

6. The CES has a planned continuing professional development program for faculty to help them use distance education effectively in program delivery.
   1. 2. 3. 4. 5
   Mean 3.00 Standard Deviation 1.020 Variance 1.040

7. The CES has a system to obtain and process feedback on programs delivered through distance education methods.
   1. 2. 3. 4. 5
   Mean 3.27 Standard Deviation 1.218 Variance 1.485

8. The programming process used by the CES in planning, designing and implementing, and evaluating it’s programs recognizes and includes distance education as an appropriate and effective teaching/learning mode for program delivery.
   1. 2. 3. 4. 5
   Mean 3.62 Standard Deviation 1.061 Variance 1.126
9. Continuous funding for distance education is at a level that indicates the CES’s commitment to deliver programs via distance education.

<table>
<thead>
<tr>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Variance</th>
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<tbody>
<tr>
<td>3.08</td>
<td>1.055</td>
<td>1.114</td>
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10. The state CES maintains a list of current information on distance education resources (e.g. software, information sites, etc.) available from other state’s Cooperative Extension Services and other providers.

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<tr>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Variance</th>
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</thead>
<tbody>
<tr>
<td>3.04</td>
<td>1.160</td>
<td>1.345</td>
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</table>

11. The CES makes the distance education resources (e.g. software, information sites, etc.) provided by other state’s Cooperative Extension Services and other providers available if appropriate for use by their state and field faculty in the delivery of programs.

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<thead>
<tr>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Variance</th>
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<tbody>
<tr>
<td>3.11</td>
<td>1.188</td>
<td>1.410</td>
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12. The CES encourages the use of distance education resources provided by other state’s Cooperative Extension Services and other credible providers if appropriate by their state and field faculty in the delivery of programs.

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<tr>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Variance</th>
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<tbody>
<tr>
<td>3.63</td>
<td>.967</td>
<td>.934</td>
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</table>

13. An equal reward or incentive system exists for faculty who use distance education delivery and/or traditional delivery modes.

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<tr>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Variance</th>
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<tbody>
<tr>
<td>3.33</td>
<td>1.271</td>
<td>1.615</td>
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14. To assure that the goals of programs that use distance education methods are achieved, a plan is in place for the continuous support of the faculty and staff involved in distance education.

<table>
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<tr>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Variance</th>
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</thead>
<tbody>
<tr>
<td>3.15</td>
<td>1.199</td>
<td>1.439</td>
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15. The CES faculty regularly scans its environment to identify potential target audiences that can best be reached via distance education.

<table>
<thead>
<tr>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Variance</th>
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<tbody>
<tr>
<td>2.96</td>
<td>1.192</td>
<td>1.422</td>
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</table>
16. Needs assessments include input from clientele and stakeholders about potential clientele
groups and specific situations for which distance education modes can expand or enhance
program delivery.

1  2  3  4  5
Mean  2.26   Standard Deviation  1.196   Variance  1.430

1  2  3  4  5

17. The CES is involved in identifying agencies, organizations, and groups that have a stake
or interest in Extension’s distance education programs.

1  2  3  4  5
Mean  3.41   Standard Deviation  1.083   Variance  1.174

1  2  3  4  5

18. The leaders of potential publics that can be effectively and efficiently served through
distance education are regularly identified by the CES.

1  2  3  4  5
Mean  3.04   Standard Deviation  1.126   Variance  1.268

1  2  3  4  5

19. The CES establishes and maintains communication with these key leaders for the
purpose of engaging them in a discussion of the educational needs of their followers that can be
best met through distance education.

1  2  3  4  5
Mean  2.92   Standard Deviation  1.093   Variance  1.194

1  2  3  4  5

20. The CES regularly monitors the educational needs of its distance education
audiences through periodic surveys and other forms of needs assessments.

1  2  3  4  5
Mean  2.81   Standard Deviation  1.145   Variance  1.311

1  2  3  4  5

21. The CES through it’s planned programs for distance education publics, selects the most
appropriate distance education methods for responding to the educational needs of these
audiences.

1  2  3  4  5
Mean  3.22   Standard Deviation  1.281   Variance  1.641

1  2  3  4  5

22. Educational objectives are achievable by the intended distance education participants for
whom they were formulated.

1  2  3  4  5
Mean  3.67   Standard Deviation  .961   Variance  .923

1  2  3  4  5
23. Information delivered via the distance mode is prepared through a team approach; the team includes the subject matter specialist, instructional designer, editor, and other necessary personnel.

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<tr>
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<tbody>
<tr>
<td>Mean</td>
<td>3.48</td>
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<tr>
<td>Standard Deviation</td>
<td>1.087</td>
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<tr>
<td>Variance</td>
<td>1.182</td>
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24. Learning strategies and learning activities for distance education participants are identified by CES professionals to assure the attainment of the desired educational objectives.

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<tr>
<td>Mean</td>
<td>3.48</td>
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<tr>
<td>Standard Deviation</td>
<td>1.087</td>
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<tr>
<td>Variance</td>
<td>1.182</td>
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25. The needs of the distance education clientele are translated into the learner objectives as the basis for the distance education program.

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<tr>
<td>Mean</td>
<td>3.27</td>
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</tr>
<tr>
<td>Standard Deviation</td>
<td>1.251</td>
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<td></td>
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<tr>
<td>Variance</td>
<td>1.565</td>
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26. The quality of information for learning offered via the distance education mode is at least equivalent to information offered via traditional CES methods.

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<tbody>
<tr>
<td>Mean</td>
<td>3.68</td>
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<tr>
<td>Standard Deviation</td>
<td>1.180</td>
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<tr>
<td>Variance</td>
<td>1.393</td>
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27. Clientele involved in programs delivered via distance education have access to CES professionals equivalent to the access available to traditional program participants.

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<tbody>
<tr>
<td>Mean</td>
<td>3.64</td>
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<tr>
<td>Standard Deviation</td>
<td>.907</td>
<td></td>
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</tr>
<tr>
<td>Variance</td>
<td>.823</td>
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28. Responses obtained by evaluating distance education programs are used to revise these programs.

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<tbody>
<tr>
<td>Mean</td>
<td>3.52</td>
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<tr>
<td>Standard Deviation</td>
<td>1.085</td>
<td></td>
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<tr>
<td>Variance</td>
<td>1.177</td>
<td></td>
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</table>

29. Educational resources provided to CES distance education participants are at least equivalent to those materials provided to participants of traditional CES delivery systems.

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<tbody>
<tr>
<td>Mean</td>
<td>4.04</td>
<td></td>
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<tr>
<td>Standard Deviation</td>
<td>.720</td>
<td></td>
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<tr>
<td>Variance</td>
<td>.518</td>
<td></td>
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</table>
30. Educational materials that are developed for CES distance education clientele are easily used and understood by the target learners.

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<thead>
<tr>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Variance</th>
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<tbody>
<tr>
<td>3.85</td>
<td>.834</td>
<td>.695</td>
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31. A follow-up evaluation system is used to measure the outcomes achieved by distance education participants.

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<tr>
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<th>Standard Deviation</th>
<th>Variance</th>
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<tbody>
<tr>
<td>3.27</td>
<td>1.002</td>
<td>1.005</td>
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</table>

32. The learning experiences of CES distance education participants are at least equivalent to those learning experiences afforded traditional CES program participants.

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<thead>
<tr>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.62</td>
<td>1.023</td>
<td>1.046</td>
</tr>
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33. Local CES resources are adequate and accessible to potential distance education participants.

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<thead>
<tr>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Variance</th>
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<tbody>
<tr>
<td>2.92</td>
<td>1.129</td>
<td>1.274</td>
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34. Feedback from distance education participants is used by CES faculty to ensure that teaching-learning activities attain the results desired by the participants.

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<tr>
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<th>Standard Deviation</th>
<th>Variance</th>
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</thead>
<tbody>
<tr>
<td>3.58</td>
<td>.857</td>
<td>.734</td>
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</table>

35. The selection of media for delivering educational programs is based on instructional effectiveness and suitability to the distance education participants.

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<tr>
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<th>Standard Deviation</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.58</td>
<td>.857</td>
<td>.734</td>
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</table>

36. A plan is used to publicize and promote CES programs delivered via distance education to potential distance education clientele and other interested publics.

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<tr>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Variance</th>
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</thead>
<tbody>
<tr>
<td>3.46</td>
<td>1.067</td>
<td>1.138</td>
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</tbody>
</table>
37. Cooperative Extension System distance education programs are designed to minimize barriers that limit target learners participation.

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</thead>
<tbody>
<tr>
<td><strong>Mean</strong></td>
<td>3.50</td>
<td><strong>Standard Deviation</strong></td>
<td>.906</td>
<td><strong>Variance</strong></td>
</tr>
</tbody>
</table>

38. Cooperative Extension System distance educators carefully monitor educational activities of distance education participants.

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</thead>
<tbody>
<tr>
<td><strong>Mean</strong></td>
<td>3.27</td>
<td><strong>Standard Deviation</strong></td>
<td>1.079</td>
<td><strong>Variance</strong></td>
</tr>
</tbody>
</table>

39. Cooperative Extension System distance education program outcomes/expectations are clearly identified.

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</thead>
<tbody>
<tr>
<td><strong>Mean</strong></td>
<td>3.46</td>
<td><strong>Standard Deviation</strong></td>
<td>1.104</td>
<td><strong>Variance</strong></td>
</tr>
</tbody>
</table>

40. CES’s distance education program effectiveness is determined in terms of measurable outcomes/expectations.

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</thead>
<tbody>
<tr>
<td><strong>Mean</strong></td>
<td>3.58</td>
<td><strong>Standard Deviation</strong></td>
<td>.987</td>
<td><strong>Variance</strong></td>
</tr>
</tbody>
</table>

41. Cooperative Extension distance educators develop and implement evaluation plans to measure outcomes.

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<tbody>
<tr>
<td><strong>Mean</strong></td>
<td>3.54</td>
<td><strong>Standard Deviation</strong></td>
<td>1.029</td>
<td><strong>Variance</strong></td>
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</table>

42. Cooperative Extension distance educators revise instructional strategies used in distance education delivery based on feedback obtained from distance education participants and through other evaluation tools.

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<tbody>
<tr>
<td><strong>Mean</strong></td>
<td>3.73</td>
<td><strong>Standard Deviation</strong></td>
<td>.778</td>
<td><strong>Variance</strong></td>
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43. Time, materials, and other costs, resources, and inputs to CES distance education programs are clearly identified and can be used in assessments of cost-effectiveness.

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<tbody>
<tr>
<td><strong>Mean</strong></td>
<td>3.27</td>
<td><strong>Standard Deviation</strong></td>
<td>1.079</td>
<td><strong>Variance</strong></td>
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</table>
44. The policies, procedures, and activities related to CES distance education programs are continually reviewed and revised if necessary.

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Mean 3.35

Standard Deviation 1.164

Variance 1.355

45. Cooperative Extension System educators apply sound principles of nonformal adult and youth education as appropriate in facilitating learning among distance education participants.

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Mean 3.62

Standard Deviation 1.134

Variance 1.286

46. Results of the evaluations of CES distance education programs are reported to the appropriate stakeholders, such as the learners themselves, program partners, and sources of support, in a manner that can be easily understood.

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Mean 3.50

Standard Deviation 1.208

Variance 1.460
Appendix F
Correspondence
November 16, 2001
Dr. Extension Programmer
Associate Professor Extension Education
100 Extension Hall
Anywhere, USA 10010

Dear Dr. Programmer,

I am conducting research intended to develop a model that represents what is important to Extension administrators and program leaders in planning, designing and implementing, and evaluating distance education programs. The development of this model is the focus of my doctoral dissertation in Adult Education at North Carolina State University. I need your help in identifying the critical elements that should be included in a distance education programming model. Specifically, I am asking you to examine each item, in the attached survey, and rate it according to its relative importance in planning, designing and implementing, and evaluating Extension programs. Your inputs will be used to revise, reword, and strengthen each of the items in the proposed model.

In conducting this research, I will be using the Delphi technique. The objective is to use the expertise of informed persons to develop a holistic model that incorporates the critical elements that you and other members of the panel support. As you know, the objective of the Delphi method is to reach a degree of consensus on the model and each of the elements encompassed in it. To reach consensus, the Delphi method requires that the study population participate in at least two rounds.

You are one of the nation’s leaders in Cooperative Extension programming. I need the benefit of your expertise in developing a programming model for distance education that can be useful to Cooperative Extension colleagues throughout the United States. Professors Ed Boone and John Pettitt, co-chairs of my doctoral advisory committee, and I will greatly appreciate your valuable assistance. It would be helpful if you could share with me your assessment and proposed changes within the next ten days.

In order to electronically access the survey I would ask that you review the linked informed consent form (address and link given below). If you agree to participate click on agree and you can then complete and submit the survey. If you have questions about the survey, or would like to receive the survey as an e-mail attachment or by surface mail, please reply to me at the postal address above or by email <Kenneth_Mccaskill@ncsu.edu>.

Informed consent <http://macon.ces.state.nc.us/consent>

Sincerely,

Kenneth N. McCaskill
County Extension Director
Macon County