

UNIVERSITY OF CAPE COAST

**PERCEIVED COMPETENCY LEVELS AND TRAINING NEEDS OF
AGRICULTURAL EXTENSION AGENTS IN COMMUNICATION METHODS
AND TEACHING AIDS IN THE GREATER ACCRA REGION OF GHANA**

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**THESIS SUBMITTED TO THE DEPARTMENT OF AGRICULTURAL
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DEGREE IN AGRICULTURAL EXTENSION**

SEPTEMBER, 2004

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CANDIDATE'S DECLARATION

I hereby declare that this thesis is the result of my own original research and that no part of it has been presented for another degree in this University or elsewhere.

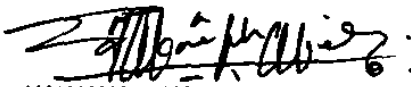
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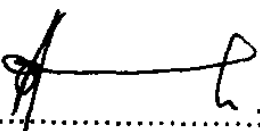
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ABSTRACT

The need to improve upon the performance of the extension worker and hence agricultural productivity is evidenced by the number of national agricultural extension programmes held since Ghana gained independence in 1957. One of the drawbacks of these programmes is that the long-term desired outcome of improving agricultural productivity has never been met. Recent studies have identified incompetence of staff as a major cause of the poor performance of organizations. This study was, therefore, conducted to determine the present competency levels and training needed in agricultural communication methods and teaching aids of extension agents in the Greater Accra Region as perceived by themselves. Communication methods generally used to communicate with their clients were also examined. Self-administered validated questionnaires targeted at the agents were used to collect data.

Data analysis was done using Statistical Package for Social Sciences (SPSS). Statistical analysis used included descriptive, Pearson correlated techniques and Analysis of Variance (ANOVA). The results indicated that about 70.2% of the respondents were males. The mean age of AEAs studied was forty-one years. Eighty-two AEAs representing 67.8% of the respondents' possess the basic educational requirement; i.e. General Agricultural Certificate. The mean communication skill of the AEAs was twelve (11.7) with the majority (64%) having over nine years experience in communication skills. The survey revealed that a majority of about 64% had over nine years experience in communication skills, representing a mean of 11.7.

The number of training courses attended was found to be irregular with majority of the AEs representing 33.9% attending only two training courses with only 0.8% of the AEs studied had the highest training courses of twenty-four.

However, their perceived competency level in planning, implementing and evaluating extension teaching aids was found to be good, they needed a higher level of training in implementing and evaluating extension teaching aids.

It was recommended that AEs competency level in extension communication methods and extension teaching aids should be frequently assessed so that the discrepancy between what knowledge they have achieved, and what they have acquired can be ascertained. This invariably will improve upon their competency level in planning, implementing and evaluating both communication methods and extension teaching aids.

DEDICATION

I hereby dedicate this work to my father MR. T. W. Abankwa and my mother MRS. L. O. Abankwa for their prayers, which helped me to complete this programme. May God bless them.

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LIST OF ABBREVIATIONS

1. AEA Agricultural Extension Agents
2. AMA Accra Metropolitan Assembly
3. AES Agricultural Extension System
4. DAES Department of Agricultural Extension Services
5. DEA Dangme East Assembly
6. GDA Ga District Assembly
7. MoFA Ministry of Food and Agriculture
8. NGO Non-Governmental Organisation
9. SMS Subject Matter Specialist
10. SPSS Statistical Package for Social Sciences
11. TMA Tema Municipal Assembly
12. UAES Unified Agricultural Extension Services
13. USA United States of America

CHAPTER ONE

INTRODUCTION

1.1. BACKGROUND OF THE STUDY

The agricultural sector is largely dominated by small holder farmers in rural areas, whose poverty levels are said to be unacceptably high, with 54% of those classified as poor being food crop farmers who derived their primary income from farming and other farm based activities (MOFA, 1997).

Agricultural extension is basically a non-formal educational system. At its best, the system focuses on helping people (farmers and their other clientele) to convince themselves of the benefits of scientific information on new agriculture technologies, improved practices and alternative approaches to solving problems or managing their own affairs.

In the agricultural extension organizational set up, the agricultural extension agents (AEAs) are the grassroots workers. The AEAs are the majority manpower resource of the agricultural extension system in Ghana. They are the key element in the programmes of the agricultural extension system, serving as the main link between the overall agricultural extension system and its clientele. AEAs translate the system's policies into realities at field levels, a function that is very critical to the entire system. Their role in the extension system thus cannot be underrated. The effectiveness of extension service delivery depends largely on what happens at the field level, which in turn depends very much on the skills of the AEA.

The government of Ghana has the following targets for the nation's agriculture;

- 1. To promote an adequate and secured supply of food and raw materials at competitive prices.**
- 2. To achieve an average overall growth of 4% per annum in agricultural productivity as against present average of 2% per annum.**
- 3. To increase productivity and yields through the application of improved technologies rather than by expanding the areas under cultivation (Ghana vision 2020 document, 1995).**

The Ministry of Food and Agriculture (MOFA) have the specific goal to increase agricultural productivity on sustainable basis in all its major sub-sectors including crops, livestock and fisheries. This responsibility can be achieved, to a greater extent, by proper utilization of human resources that are highly skilful in communication skills and willing to pass on innovative technologies to the farmers.

Literature suggests that some of the variables affecting the competency level of AEAs in communication methods are training, supervision, good working conditions, and availability of communication tools (Leonard, 1985).

This study examines how such variables influence the competency of AEAs in the Greater Accra Region and correlates the results with their corresponding performance.

1.2. PROBLEM STATEMENT

The inference often drawn from observation by way of farmers adopting agricultural technology is that, agricultural extension agents do not send or convince the farmers to accept the technology; therefore training agricultural extension workers on the communication methods has not been part of their training workshops.

During Agricultural Directors Workshop (2002), information in the Greater Accra Region as regards AEAs competency levels and level of training needed in the use of agricultural communication methods and extension teaching aids in technology delivery was that, they are not skilful in the use of these communication methods and teaching aids.

The performance and output of the Ministry of Food and Agriculture in the Greater Accra Region is not commensurate with the size, scope and level of investments in the system. This is evident by the poor productivity of most farmers, incessant food shortages and accompanying high prices and vast environmental degradation attributed mostly to poor farming practices (MOFA, 1997).

Arokoyo (1996) cited in a 1998 CTA publication, indicated that in sub-sahara Africa, agriculture was still characterized by manual land preparation, low levels of purchased inputs and low levels of adoption of potentially useful innovation. He further stated that the poor management of agricultural services compounded

these factors and has somehow resulted in less than impressive performance of the sector.

The questions asked therefore are 'why the low performance of the Extension system? Could it still be attributed to problems associated with AEAs competency in the use of communication methods and extension teaching aids as well as their level of training needed? What are the AEAs competency level in the identified communication methods and extension teaching aids both within and outside the operational system of MOFA?

Current information as regards AEAs competency levels in these identified communication methods and extension-teaching aids are not simply available for effective assessment of the situation. That is, the competency level and the level of training needed in communication methods and extension teaching aids. This is considered a serious problem to management of agricultural extension, noting that solution not based on empirical data cannot be very effective. (Alpheous and Vildne, 1996). Hence the need for this study.

1.3. OBJECTIVES OF THE STUDY

The general objective of this study is to assess AEAs perceived competency levels and training needs on the use of communication methods and extension teaching aids to help communicate effectively with farmers.

The specific objectives of this study are to:

1. describe AEAs socio-demographic characteristics in terms of

- a. age
- b. sex
- c. years at position
- d. educational level
- e. years of experience in communication skills
- f. number of training courses attended

2. examine AEAs perceived competency levels in the use of communication methods in terms of planning, implementation and evaluation.

3. examine AEAs perceived levels of training needed in the use of communication methods in terms of planning, implementation and evaluation.

4. determine the perceived competency levels of AEAs in the use of some selected extension teaching aids in terms of planning, implementation and evaluation.

5. identify AEAs perceived competency levels of training needed in extension teaching aids in terms of planning, implementing and evaluating.

6. describe the relationship between AEAs socio-demographic characteristics and their total competency levels in communication methods and extension teaching aids.

7. describe the relationship between AEAs socio-demographic characteristics and their total levels of training needed in communication methods and extension teaching aids.

8. find the relationships between AEAs total competency levels and the level of training needed in the use of communication methods in terms of planning, implementing and evaluating.

9. determine the relationships between AEAs total competency levels and the level of training needed in the use of extension teaching aids in terms of planning, implementing and evaluating.

12. to find from AEAs some important suggestions to improve their competency levels in the use of some communication methods and extension teaching aids.

1.4. RESEARCH QUESTIONS

It is to find AEAs perceived competency levels and training needs on the use of communication methods and extension teaching aids to help communicate effectively with farmers as stated in the objectives.

1. How are the AEAs distributed on the bases of age, sex, educational qualification, working experience and number of training courses attended?
2. What are the AEAs perceived competency levels in communication methods?
3. What are the AEAs perceived competency levels in extension teaching aids?
4. What are the AEAs perceived level of training needed in communication methods?
5. What are the AEAs perceived level of training needed in extension teaching aids?
6. What are the relationships between and among AEAs perceived competency level in communication methods and their demographic characteristics?
7. What are the relationships between and among AEAs perceived competency level in extension teaching aids and their demographic characteristics?
8. What are the relationships between and among AEAs perceived level of training needed in communication methods and their demographic characteristics?
9. What are the relationships between and among AEAs perceived level of training needed in extension teaching aids and their demographic characteristics?
10. What are the differences between the four districts in terms of AEAs perceived level of training needed in communication methods?

11. What are the differences between the four districts in terms of AEAs perceived competency level in communication methods?

12. What are the differences between the four districts in terms of AEAs level of training needed in extension teaching aids?

1.5. RESEARCH HYPOTHESES

Hypothesis is, simply put, to predict some sort regarding the possible outcomes of a study.

The following hypotheses were suggested for the study and they were tested at 0.05 alpha level.

1. Ho: (Null hypothesis) There is no relationship between AEAs demographic characteristics (a. Age b. sex, c. years at position d. educational level, e. years of experience in communication skills, f. number of training courses attended) and their total competency in planning communication methods.

Hi: (Alternate hypothesis) There is relationship between and among AEAs demographic characteristics (a. Age b. sex, c. educational qualification, d. working experience, e. number of training courses attended) and their total competency in planning communication methods.

2. Ho: (Null hypothesis) There is no relationship between AEAs demographic characteristics (a. Age b. sex, c. years at position d. educational level,

e. years of experience in communication skills, f. number of training courses attended) and their total level of training needed in planning communication methods.

3. Ho: There is no relationship between AEAs total perceived competency level and their level of training needed in communication methods.

Hi: There is relationship between AEAs total perceived competency level and the level of training needed in communication methods.

4. Ho: There is no relationship between AEAs total perceived competency level and their level of training needed in extension teaching aids.

Hi: There is relationship between AEAs total perceived competency level and the level of training needed in extension teaching aids.

1.6. VARIABLES OF THE STUDY

The dependent variable for the study was level of competency and training needs of AEAs

The independent variables for this study was as follows

1. the demographic characteristics

b. age

c. sex

d. years at position

e. educational qualification

f. years of experience in communication skills

g. training courses attended

1. identified communication methods used by AEAs

a. demonstration

b. lecture

c. meetings

d. discussion

e. field trips

f. agricultural shows

2. identified extension teaching aids used by AEAs

a. flip chart

b. video

c. booklet

d. overhead projector

e. posters

f. folders

g. pamphlet

h. radio

i. newspapers

1.7. JUSTIFICATION

This study assessed the perceived competency level and training needs of AEAs on the use of some identified communication methods and extension teaching aids and correlated such competency to their performance in the delivery of extension technology.

Appropriate professional competency is not something that is handed down to a person in the form of a recipe. It takes effective training to achieve it. By virtue of being a human being, a person is intrinsically motivated to master the environment and finds successful mastery of task to be gratifying (White, 1959). Because awareness of competency is such a powerful influence on human behaviour, adults who are learning and can feel an actual sense of progress and real accomplishment are usually well motivated to continue their efforts in a similar direction. Extension agents need skill and competency to plan, implement and evaluate communication methods and extension teaching aids in educational programmes for farmers.

The prospective extension agent need to be trained to increase his or her competency level in each of the communication methods in order to cope with whatever situation that may be encountered during his or her interactions with the farmers. To provide opportunities for extension agents to acquire knowledge and skills in communication methods and extension teaching aids, it is important to clearly understand the perceived levels of competency and level of training needs of extension agents in Ghana.

This study sheds light on the current competency levels of AEAs in the Greater Accra Region and enables extension administrators to plan appropriate programmes on various extension technology deliveries to farmers.

There is the urgent need for agricultural extension administrators in the Greater Accra region to help improve the communication method. One key to such effective transfer of technology and for that matter increase in food production is the AEAs competency in communication.

Results of this study provide more information about the level of training needed by the AEAs to increase their competency level in communication methods and in extension teaching aids.

The results of this study is also intended to help the school of Agriculture of the University of Cape Coast and other tertiary institutions in Ghana to provide more appropriate training for its students to enable them to acquire competencies in communication methods of their job-related areas in order to cope with whatever situations they may encounter in their extension duties.

1.8. LIMITATIONS OF THE STUDY

Since the competencies are specially focused on extension agents of the Ministry of Food and Agriculture in the Greater Accra Region, the results are valid for the selected districts in the Greater Accra Region whose conditions bear close agents similarities. The results of this study, therefore, represent the views of extension presently at post and may not necessarily be the same in future, because perceptions are susceptible to change.

1.9 DELIMITATION OF THE STUDY

The study was limited to perceive competency in the use of some identified communication methods and extension teaching aids by the researcher from literature and fifteen years personal experience with the Ministry of Food And Agriculture.

1.10. DEFINITION OF TERMS

- a. **competency-** According to the study, competency connotes proficiency, the capability to perform effectively and efficiently a given task and is usually composed of some combination of knowledge, attitudes and often skills. Hence competencies for the purpose of this study focus on the ability of an extension worker to successfully achieve optimal performance in job related duties.
- b. **Perception-** This is an opinion held by an individual or group of people based on either facts gathered, appearance, and awareness of things, physical senses or thoughts. For the study perceptions are feelings and beliefs of AEAs about the specific variables as may be determined by their indications to items listed under such variable on 1-5 point likert type scales ranging from poor to excellent (competency) and from very little to very much (training needed).
- c. **Agricultural Extension Agents (AEA)-** In this study, AEAs refer to the contact men and women at the field level, who give assistance and manage agricultural extension activities at the farmers level in the Ministry of Food and Agriculture. They usually work in a demarcated area referred to as an operational area.

- d. **Communication method-** In this study, communication method refers to any style organized according to the purpose to provide information and skill training and in –depth understanding or critical thinking.
- e. **Extension teaching aids-** In this study, extension teaching aid refer to materials designed to aid teaching and learning by stimulating the sense of sight and often, the sense of hearing.

1.11 STUDY AREA

The research was carried out in four districts in the Greater Accra Region. Field staff such as Agricultural Extension Agents (AEAs) in these areas communicates with farmers using different communication methods and teaching aids. As a result of this they have come into contact with different approaches in communication.

The Greater Accra Region is the smallest region in Ghana in terms of landmass covering a total surface area of 4,540 square kilometres. The region is centrally located within the coastal belt of Ghana and shares boundaries with the Eastern Region to the north, Central Region to the West and Volta Region to the East. To the south of the Region lies the Gulf of Guinea which spans a 220 kilometre coastline stretching from Langma near Kasoa on the West to Ada on the East.

The Greater Accra Region has a total counted population of 2,905,726 (2000 census) representing 15 % of the country's population and with a growth rate of 4 %, which is the highest in the country. The region remains predominantly urban (87.7%), which is about twice the national average of 43.4%. It has a population density of 896 persons

per sq. kilometre, which is much higher than the national density of 79%. There is therefore enormous pressure on land or what the land can generate.

The region is divided into five (5) assemblies namely: the Accra Metropolitan Assembly (A.M.A.), Tema Municipal Assembly (T.M.A.), Ga District Assembly (G.D.A.), Dangme West District Assembly (D.W.D.A.) and Dangme East Assembly (D.E.D.A.). Below is a table showing the size of each district in the Greater Accra Region.

Table 1. SIZE OF EACH DISTRICT IN THE GREATER ACCRA REGION

DISTRICT	AREA		Percentage of Total coverage
	Km2	Ha	
Ga	1,225.8	122,580	27
Tema Municipal Assembly	454	45,400	10
Dangme West	1,589	158,900	35
Dangme East	998.8	99,880	22
Accra Metropolitan Assembly	272.4	27,240	6
Total	4,540	454,000	100

Source: MOFA, (Regional office) 2003.

The main agricultural activities in the region are fishing, livestock, poultry production and vegetables notably pepper, okro, garden eggs, cabbage and watermelon. The region is also the leading producer of major non-traditional horticultural crops such as pineapples, pawpaw, mangoes and Asian vegetables.

Both the Regional and District Agricultural Development Units have well experienced staff with specialisation in crops, livestock and fisheries. Total number of staff in the region as at December 2002 was 437. This comprised 56 professionals, 56 sub-

professionals, 191 technical staff and 134 supporting staff. The supporting staff include administrative officers, secretarial, drivers and security personnel.

1.12. ORGANISATION OF THE STUDY

The study is divided into five chapters. Chapter one deals with the introduction of the study with the following sub-sections: background of the study, problem statement, objectives of the study, research questions, research hypotheses, variable of the study, justification, definition of terms and the study area.

Chapter two of the text covers the review of literature on competency, extension communication methods, extension teaching aids, the concept of extension and the role of the AEA.

Chapter three deals with the research methodology used in the data collection. Chapter four discusses the results of the study and draws conclusion. Finally chapter five deals with the summary, conclusions and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1. CONCEPTUAL FRAMEWORK OF COMPETENCY

Current usage of the term competency in education suggests that its precise meaning is of less importance to many people than its use for purely historical purposes. The term has been used in such a variety of ways that meaningful communication on the subject of competency has been exceedingly difficult.

Competency has a pertinent etymology and the Webster's New World Dictionary of the American Language (1980), identifies the word compete as its root. Advocates of competency are quick to note that a given task, goal or skill has been learned and that evidence of that learning can be verified.

Doll (1977) like Bruner (1977), conceives of competency as much more than behaviour or performance, rather as a state of being, a capacity or an intellectual power. Bruner (1977), however, argues that competency needs to have a performance outlet and the teacher's task is to find that outlet. Not only should the teacher find a performance vehicle for the expression of competency, he/she should also help the individual transfer the competency performance relation he/she has, from a task he/she knows and can do, to one he/she does not know and cannot do. In this way extending it from one social milieu (or performance framework) to another will develop competency.

The determination of what constitutes competency is “the rock upon which all defensible examination procedures must be built” (Loveland, 1976 p.5). The traditional technique for identifying common or unique elements of competent performance is to perform one of a variety of types of job function analysis. This approach is useful in identifying motor skills, but too narrow to be used in determining more complex dimensions of professional practice. This approach also does not identify critical and differentiating characteristics of the job performer.

According to Brunner (1977), behavioural objective method for defining and measuring professional competencies is oversimplified. The resulting low inference behavioural outcomes even when properly sampled and validated, have been found empirically insufficient for defining or validly predicting competency. Such a judgment- based approach may yield reliable observable outcomes, but it provides no insight into the skills and abilities that cause these outcomes.

New approaches to job analysis are emerging that focus on variables which explain competency rather than focusing on the behaviour themselves. The “behavioural event analysis technique” consists of a structured interview and involves obtaining a number of descriptions of behavioural episodes. Responses are recorded and analysed by professionals trained in concept formation techniques to yield concepts that account for the different ways that more effective and less effective practitioners perform their work.

Specific behaviours may be statistically associated with professional competency, but it does not follow that these behaviours lead to competency. The domain of

performance is simplistic. Knowledge, skills, abilities and other characteristics that constitute competency at one level of profession may be quite different from those that constitute at another level.

Klemp (1977) asserts that the skills related to learning, recall and forgetting are not so important to success as the conceptual skills that enable one to bring order to information chaos that characterizes one's everyday environment. Competency is a cause of effective performance, not a synonym for it (Klemp, 1977). The competency of a person, according to him, is judged by his or her performance.

The way competency is ascribed to a person and the way it is measured however, are often two different things. Nevertheless, once a person enters that occupation, none of those measures will reliably predict that person's performance (McClelland, 1973). Competency can therefore be measured, but its measurement depends on its definition.

2.1.1 PERCEPTION OF COMPETENCY

The perception of competency is likely to be problematic for various reasons. For one thing, people will generally agree with one another on an overall evaluation of how competent or skilled another person is but, they are likely to disagree on the component or definition of just what competency is (Wiemann, 1977). Second, the 'fit' between what people perceive and what the other person is actually doing can be problematic. Rubin (1985), for instance, is not alone in her discovery that people's perceptions of competency are often unrelated to the behaviour they have observed. Third, the nature of a person's perception is problematic. When you perceive other

people as being competent communicators, you perceive them more in terms of your own feeling than according to what they are actually doing when they are communicating. Despite the problem of providing a clear definition of perception of competency, Spitzberg and Cupach (1989) agree that no discussion of competency occurs without mentioning or implying three predominant components of competency: appropriateness, effectiveness and flexibility.

When one engages in appropriate interaction, one does not violate any expected rules or norms of others or the interaction between individuals. The behaviour 'fits' the context and yet he or she does not have to conform to be considered appropriate. Effectiveness is related to appropriateness in that it is the 'accomplishment of a desired or preferred outcomes'. Spitzberg (1993) clarifies that these outcomes need not be positive, that is, accomplishing that which is the least detrimental may be the most competent. Discussion of competency invariably includes discussion of various degrees of effectiveness and appropriateness. Ideally, it will stand to reason that optimal competency occurs when it is both effective and appropriate. Flexibility or behavioural adaptability is recognized as a most vital dimension of competency so much that, it is often used synonymously with competency (Spitzberg, 1993).

2.2. IDENTIFYING AND DEFINING COMPETENCY

The common sense notion that an academic credential represents at least a minimum level of competency is hard to overcome. This is true in spite of significant empirical evidence that credential are not causally related to, and often not even correlated with, performance in the world of works (Heath, 1977). If testing is to substitute for credentials, test scores must be more indicative (i.e. predictive) of

professional competency than are credentials. The determination of what constitutes competency is the rock upon which all-defensible examination procedures must be built (Loveland, 1976). Test development logically begins with an identification of specific knowledge, skills, abilities and other characteristics that comprise occupational performance domains. The traditional technique for identifying common or unique elements of competency is to perform one of a variety of types of job function analyses (Spitzberg, 1993).

Brunner (1977) classified jobs according to continuous job requirements. This approach is useful in identifying motor skills, but too narrow to be used in determining more complex dimensions of professional practice. Variations of this method exist under the rubric of the behavioural objective approach. Carried to an extreme, this approach results in a list of countless skills connected with particular kinds of jobs. These lists neglect many significant areas of job competency because they address only external, observable behaviours without consideration of interpersonal and environmental variables that influence behaviour. This approach also does not identify critical and differentiating characteristics of the job performer. Furthermore, even rigorous behavioural observations fail to assess adequately either complex interactions among variables or underlying causes of competent professional practice.

New approaches to job analysis are emerging that focus on variables which explain competency rather than focusing on the behaviours themselves. Klemp, (1977) discovered three broad dimensions of performance that are highly related to competency, but rarely considered in licensing examinations: cognitive process

abilities, interpersonal skills and motivation. He identified three cognitive skills related to competent performance in a broad array of occupations. One is the ability to see thematic consistencies in diverse information and the ability to organise and communicate those differences. A second related cognitive skill is the ability to conceptualise the many sides of a controversial issue. A third cognitive skill that Klemm finds often taken for granted is the ability to learn from experience. Interpersonal skills included empathy, diagnostic listening, faith in the ability of people to change, and other personal attributes that enabled one to respond appropriately to clients needs or to promote feelings of efficacy in another person.

Klemm further pointed out the importance of understanding and measuring motives and goal states in predicting competency because of the evidence that thought patterns are causally related to performance. His view of analyses of competent performers in a variety of occupations provided convincing empirical support to the notion that cognitive, interpersonal, and motivational factors are critical to effective performance. All aspects of the three dimensions of behaviour can be identified, defined and measured. Thus, these dimensions should be treated as critical domains of any profession when tests of competencies are being developed.

The domain of performance is dynamic. Knowledge, skills, abilities and other characteristics that constitute competency at one level of a profession may be quite different from those that constitute competency at another level. Other changes in the profession can be expected as a result of scientific and technical developments or the changing needs of society (Loveland, 1976). Any professional competency domain is individualistic. Different practitioners may competently manage the same problem in

different ways. Clearly, how one defines the domain of competency will greatly affect one's choice of measurement procedures. If one considers competent practice to be comprised exclusively of knowledge, then knowledge tests may be appropriate.

The competency of a person is judged by his or her performance. A competent person is one who can meet or surpass performance standards, either implicit or explicit. In the world of education, a truly competency-based curriculum is designed to ensure that graduates can perform acceptably in their chosen occupations. The way competency is ascribed to a person and the way it is measured however are two different things.

Historically, competency at a job was first determined by a person's ability to perform the required task to an acceptable standard. Gradually, however, competency began to be attributed on the basis of how much a person knew; thus knowledge of science, business or literature was taken as an indication of a person's ability as a manager, chemist or writer (Klemp, 1977). Knowledge, of course, is a key part of an individual's ability to perform well, but it is far from the whole picture. Competency has been taken to mean knowing how to perform or possess the aptitude for performance (Klemp, 1977).

The idea that a competency is causally related to effective performance means that the development of a competency should lead to increased performance; that is to say, competency precedes performance. However, one often observes a skill that is correlated with effective performance, but which does not cause that performance. For example, competent writers tend to have more complete vocabularies than other

professionals; this results in finding that verbal achievement test scores are correlated with writing ability. Yet, a student who studies the dictionary may receive higher verbal achievement test scores, but will not necessarily be a better writer.

2.2.1. MEASURING AND INTEGRATING COMPETENCY

The method by which one measures a competency becomes the operational definition of that competency (Klemp, 1977). Once competency has been defined at the conceptual level, the assessment process should reflect the ways in which the competency, as defined, is demonstrated. An individual's response in a given context is dependent upon the demands of the situation, the more likely a person is to give a response dictated by that situation; the fewer the demands, the freer a person is to structure the situation and to engage in behaviour that is hoped to be effective. Multiple-choice tests are examples of the class of respondent measures, where responses to a problem is narrowly defined by situational demands (Al-Zaidi, 1979)

One of the more important issues in competency assessment is the distinction between tests that measure the recognition or recall of information and those that measure its use (Arlen, 1994). Multiple-choice, true-false and even short-answer essay tests are for memory of facts, but they may not be very good as test of knowledge. An operant test, in contrast, might present a problem that does not provide the expectation of a certain type of response. It can, therefore, give evidence that the individual is able to use what he or she has learned. Operant measures provide situations that allow different responses, depending upon the knowledge, skills and other competencies unique to the individual. A test that allows a greater range of possible responses, however, creates a situation that is difficult to score by a criterion of correctness,

where only one response is appropriate (Baker and Trusse, 1981) This scoring problem can be overcome by replacing the criterion of correctness with that of effectiveness, where more than one response is appropriate. In addition to the nature of the test being appropriate to the competency being measured, there are five major areas of concern when a test is designed to measure competency: the sensitivity, utility, uniqueness, reliability and validity of the instrument. The sensitivity of a measure is the degree to which that measure reflects variations in a competency (Loveland, 1976).

The utility of a measure is the degree to which it permits a variation in the range of responses. Sensitivity and utility are related in that only individuals who possess a high level of a particular competency may demonstrate certain response repertoires. Uniqueness refers to the lack of redundancy or overlap between measures of different competencies. Reliability refers to the consistency with which a measure will assess a competency. A test that is unreliable will show variation in scores due to weakness of the test itself than to difference among the people taking it. Validity refers to the degree to which a test measures what it is intended to measure (Agnew and Gilbertson, 1986)

Chizari (1991) observed that there are four types of validity that are generally considered in competency assessment and of these, face or content validity is most common. Face validity is the degree to which a test appears to measure the competency being assessed. Content validity is the degree to which a test measures the competency being measured. Operant measures have the greatest potential for satisfying the criterion of sensitivity, utility, uniqueness and validity. Each area has its

own range of values that are acceptable to the assessor, depending on the relative importance of each factor to the meaning of the measure. Demanding high standards in one area may mean having to accept lower standards in another, so that our goals will be to achieve an optimal balance among these factors. Competencies should be assessed not in a vacuum, but in the context of an organization, called competency model. A competency model is a functional clustering of individual competencies that tend to occur in situations where effective performance is demonstrated. The number of competencies in a particular model will vary according to the complexity of the criterion for effectiveness. As there are different behavioural manifestations of a given competency, so there are different competency manifestations for a given outcome. The pattern of test results and not the sum of all test scores contribute most to an understanding of overall individual competency.

Using the process of competency identification as a guide, one can determine which competencies are likely to be important in combination. One can then design assessment situations that permit the simultaneous demonstration of each of these key competencies. Using a number of different competencies is the basis for what Chizari (1991) refer to as multitrait-multimethod measurement. Their paradigm includes the separate assessment of single traits by each construct validity. In the competency model, each competency would be measured by more than one group of individuals but each group's results would be analyzed and compared with the other group.

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demonstrated; evaluates active participation rather than passive analysis; and brings us closer to knowing if the professional has the ability to make a positive impact on clients. (Klemp, 1977).

2.2.2 COMPETENCY IN COMMUNICATION

Spitzberg and Cupach (1989) define competency communication as the ability to engage in appropriate and effective interpersonal interaction. They argue that competent communication “accomplish task successfully” or are successful in “external control over the environment to achieve certain outcome”. Wilmot (1980) argues that, persons who are able to adapt to different relational situations are “rhetorically sensitive” and seen by others as having competent communicative skill. Any definition of competency implies that it is either ability or a quality. As the small farmer has very little access to information on innovation other than through his extension agents the communication processes by which the junior staff are kept informed are of great importance (Leonard, 1985). He argues that the communication processes within the extension services is impressionistic only. It is critically important that we systematically investigate and analyze the ways that the teachers are taught so that the instruction can be improved. No matter how strong the motivation of the receiver of information (such as the farmer) and how good his or her decoder, he or she must be provided with messages, if he or she is to be well informed. For this reason, the communication competency of the agents must be assessed periodically to ensure that they have the requisite communication skill to successfully assist farmers.

2.3 COMPETENCIES AND HUMAN RESOURCE DEVELOPMENT

The success of an organisation depends to a large extent upon the capability,

competency, efficiency and effectiveness of its human resource base (Bansal, 1991).

The human resource development system is an essential tool of management in order to develop a strong sense of capability, competency and responsibility among the employees. Kulkani (1985) observed that, "human resource development is an aid to the efficient running of an enterprise. It is now a firm belief that organisations can improve their effectiveness and productivity through the development of human beings.

People develop throughout life by seeking information and meaning and as a result enhancing proficiencies (Deci, 1980; Loevinger, 1980). At each stage, a person's characteristics and relationships reflect reciprocal interactions with the current environment, development relationship with one's own past and one's outlook on the future (Knox, 1977). Current proficiencies are not, however, static. They entail active attention to problems and opportunities and they continue to change throughout life. A person's sense of perceived proficiency (competency, efficiency, agency) is becoming increasingly recognized as a crucial mediator between interest and performance (Bandura, 1982; McKeachie, 1980).

Biddle and Thomas (1966) noted that performance is focused on action tasks, most of which are aspects of major life roles. They further assert that, understanding the discrepancy between current and desired proficiencies can energize a person to change and thereby develop his/her human resource. In practice, people compare their

current proficiencies against a standard of desired proficiencies in order to make amends.

2.3.1 COMPETENCIES REQUIRED FOR EFFECTIVE EXTENSION PERFORMANCE

Chizari (1991) in a study on competencies noted that Extension agents in the Fars Province in Iran perceived a skill gap between competencies needed and competencies possessed. Based on the discrepancy scores, the professional competencies with the largest difference between competencies needed and possessed by agents in the Fars Province, Iran were planning programmes, selecting proper teaching methods (teaching and communicating), developing an integrated programme, analyze evaluation data (evaluating) and develop a management plan.

Findlay (1992) observed a significant difference in the relationship between selected demographic experiences of high school vocational agricultural teachers in professional agricultural education activities in each of seven factors regarding their perceived levels of competency. The selected factors were programme planning, leadership skill, guidance and counseling, teaching techniques, occupational experience, adult education and school and community relations. Hertling (1974) assumed that required competencies can be identified and an educational programme can be conceived which will enable the participants to develop those competencies. He further contended that competency based educational programme must be developed on the basis that subsequent professional development will be enhanced and that competency attainment must be the overall objective of such a programme.

What professional competencies should be learned (developed) by extension agents has been examined by several researchers. Gonzalez, (1982) identified 144 competencies needed by extension agents in Pennsylvania. Of the 144 competencies, 26 were identified as appropriate for development before entering the job, 6 during graduate programme and the remaining 116 through in-service education. Similar findings were reported by Ayewoh (1983) for extension agents in Nigeria. Ongondo, (1984) found that for a majority of the extension agents in Kenya, competencies should be developed before entering the job.

Benor and Harrison (1984) have noted that in many developing Countries, pre-service training is generally designed to cover a broad range of subject matter and is more often than not academic rather than practical in nature. Ntifo-Siaw (1993) identified twenty competencies needed by extension agents in Ghana to enhance their performance. Also, in-service training has tended to be irregular, ad hoc, and not necessarily tied to any specific priorities for agricultural development. In such situations therefore, staff who are required to discharge educational responsibilities are likely to feel they are not adequately trained to do a good job.

2.3.2. COMPETENCIES IN ADULT EDUCATION

In all rural development, the role of the extension worker is basically the same, to demonstrate acceptable improvements and seek ways of bringing their adoption within the groups of farmers. Extension, therefore, is geared towards assisting farmers to identify, analyse and solve their own problems. This is done mainly through informal means. Teaching methods borrowed from the school classroom are not accepted in non-formal education (Adams, 1988). Adult learners and those who help

adults learn, have implicit theories that guide their decisions. This rationale suggests fundamental relationships among essential aspects of adult learning and teaching which constitute an interrelated set of guidelines for helping adults learn with emphasis on motivation (Knox, 1980). An understanding of the principles and practice of non-formal adult education is therefore essential for agricultural extension workers. Teaching of adults is best through discussion, practical demonstration and participation, not by lectures in the classroom. For extension workers to be competent in adult education, they should understand the principles of non-formal education and have the confidence to put them into practice. (Adams, 1988). The need for adult education has been magnified with development and adoption of advanced technology, innovative marketing strategies, new strategies in farm management and the addition of new agricultural laws and regulations.

Lee (1981) stated that adult education programmes in agriculture do not have the priority, as they did some years ago. Phipps and Osborne (1988) indicated that the 1980s have not supported the agricultural predictions made in the 1970s that, only 20 to 25 percent of all secondary agricultural instructors teach adults. Findlay and Drake (1989) reported that secondary vocational agricultural teachers were less competent in conducting activities involving adult education and school and community relations. Therefore the present methods by which teachers acquire professional competencies may not be the most appropriate methods for preparing them to perform their professional work role effectively.

2.3.3. COMPETENCIES IN SUPERVISION AND LEADERSHIP

Improved quality of extension supervision is one target for bringing about improvement in agricultural production and subsequently in the national economy. Supervision is vital to the success and impact of extension. A properly managed and supervised organization creates progress – it transforms its input into the satisfaction of human needs (Buford and Bedeian, 1988). Rollins and Yoder (1993) determined that many extension agents preferred to learn by active experimentation. This includes practical applications and preference for small group discussion and projects with opportunities to practice and receive feedback while getting things accomplished. Extension supervision must take place primarily in the field where farmers work (as opposed to villages). This will enable agents to know how effective they have been in providing good leadership (Benor and Harrison, 1997). He further contends that supervision cannot produce good agricultural extension but good extension is rarely possible without effective supervision. The purpose of extension supervision is not merely to check that farmers do their work in a correct, timely manner; more important is the objective of assisting and guiding the staff to do their task effectively.

No organization can function effectively without strong leadership and given the organization and operational problems confronting extension strong leadership of a professional extension service is especially vital (Benor et al 1984). High quality leadership and the responsibility and initiative this requires must be developed at all levels. Extension workers cannot be effective, if they do not have a broad understanding of leadership diversity, non formal education and various consultant styles (Benor, et al 1984). The quality of leadership, more than any other single factor determines the success or failure of an organization. This is true of a small group,

large organization or even an entire nation. Basically the leadership role or function involves motivation, direction, guidance and evaluation of programmes for the purpose of accomplishing a task. The task may be something the group wishes to do or more typically, it is assigned by the organization of which the group is a part. The effectiveness of a leader is usually measured on the basis of rating given by immediate supervisors or whenever possible, by measuring the performance of the leadership group.

Csoka and Bons (1978) reported that cadets who had received leader match training performed substantially better than those who had not. The same can also be said of extension workers who have competencies in leadership. FAO (1990) reviewed several past efforts of top-down administration and trickle down delivery of extension programmes and concluded that, a new strategy is needed to revitalize rural development. Future development efforts must aim at releasing the energies of rural people and guaranteeing that they share fully in the fruits of their efforts. This can only be achieved by enabling the poor to take charge of their lives to make full use of resources and to manage their own activities.

2.4. DEMOGRAPHIC FACTORS.

Some researchers have examined differences or relationship between demographic characteristics of extension personnel and the perceived level of competency needed by extension agents. Findings from these studies indicate that variables such as age (Gonzalez, 1982; Sabihi, 1978) educational level (Najjingo-Kasujja and McCaslin, 1991, Ntifo-Siaw, 1993) and prior work experience are related to the perceived importance of specific professional competencies needed by extension agents.

However, Easter (1985) found no significant difference between the perceived level of competencies needed for Swaziland extension agents and demographic characteristics such as age, gender, educational level, position, area of responsibility and prior experience.

2.4.1. GENERAL ABILITIES

To date, perhaps the single best predictors of job performance across a wide range of jobs have been tests of general abilities (Hunter and Hunter, 1984). Hunter (1980) provided a classification of job types for which general cognitive abilities versus psychomotor ability is a better predictor of performance. Job involving complex cognitive activities require more general cognitive ability; jobs involving manual activities require psychomotor ability (Hunter, 1980).

2.4.2. EDUCATION

Leonard (1973) observed that formal education of extension workers does not necessarily increase their effectiveness. In Kenya, agents with a secondary education had a lower degree of agricultural knowledge than those with an upper primary education. More important, the more educated agents were less persuasive in promoting innovations. There appears to be two explanations for this phenomenon. Firstly, the secondary school finishers tend to come from urban background and are less committed to extension work. Secondly through formal education such individuals may have developed a value system that regards farming as an inferior occupation. However, Leonard also found that the performance of secondary school finishers could be improved through practical training.

Bartholomew (1994) noted that the educational levels of extension staff often limit their effectiveness. According to him, only 7.5% of the extension employees in China have college degree with an additional 17.5% holding two-year technical degrees. Fifty three per cent (53%) have degrees at agricultural high schools and 22% have 9 years of schooling. At the village level where farmer interaction is most frequent, extension is usually represented by village leaders. Part-time farmer technicians' courses in agricultural extension subject matter have only been introduced at agricultural colleges since 1989. Although extension in China is very different from the United States system and it seems to have numerous inefficiencies, it is working (Zhang, 1992).

The findings of Findlay (1992) on methods of acquisition of professional agricultural education competencies revealed that secondary vocational agriculture teachers in three Southern States in the United States perceived themselves as having acquired the majority of the professional competencies through college courses, on the job experiences and home study.

2.4.3. AGE AND EXPERIENCE

A number of researchers have shown that the length of job experience relate to performance and hence to competencies (McEnrue, 1988). Job experience is conceptually related to ability in that, both enable an individual to attain competency and thus perform. Recent evidence has shown that length or absolute amount of job experience affects performance independently of ability (Schmidt *et al.*, 1988). In Trinidad, Thomas (1976) found that both age and years of experience were strongly correlated in the positive direction with performance of staff. Findlay and Drake,

(1989) in a study of competency of secondary Vocational Agriculture teachers observed that perceived levels of competency means were lower on adult education for all selected demographic variables. Mean scores for programme planning factor tended to increase with years of high school agriculture teaching experience.

Lawler (1973) pointed out that age and seniority are generally positively related to satisfaction and training. This, he stated, seems to be produced by "the effects of selective turnover and the development of realistic expectations about what the job has to offer" Herzberg *et al.* (1957) have explained the relationship by pointing out that among older persons, there is a concurrent upward trend in adjustment and level of training.

2.5. EVALUATION OF CURRENT LEVELS OF COMPETENCY

Evaluation is defined by Hunter (1980) as the systematic process of judging the worth, desirability, effectiveness, or adequacy of something according to definite criteria and purpose. The judgment is based on a careful comparison of observation data with criteria standard. That is, it is a form of assessment.

Evaluation is essential for assessing the success or failure of an objective. It is a continuous process, which all human beings perform, more subconsciously than consciously. Bureaucrats, administrators, teachers and other professionals stress the need for evaluation but shy away from it Wilmot, (1980). A statement by Umuhak (1980) offers an insight into such behaviour. He says evaluation is a two-edge sword that can enhance learning and personal development or be destructive of (student) learning and personality development. That is, evaluation could have positive or

negative effects on teachers, curriculum, and school system, etc. The fear of negative effect produces the repressive tendencies and unwillingness to conduct formal evaluation.

Swanson (1990) refers to evaluation as a science of providing information for decision-making. It is of tremendous value if properly and carefully conducted. This usually requires trained evaluators. However, some of the major problems facing educational evaluation include a lack of trained evaluators, a lack of appropriate evaluation instruments and procedures, and lack of adequate theory.

Irrespective of the above problems, evaluation, most particularly formal evaluation, would remain a necessity as long as objective, scientific data are required for planning and development. A question which researchers face in teacher evaluation is 'who is to perform the evaluation?' Should the instructor be asked to evaluate himself or should he be evaluated by the researcher? There are several arguments for and against either of the alternatives.

Under the best of circumstance, judgmental processes are subject to human bias, prejudice, and vested interest. The risk exists for the observer to over-depend on personal experiences, hearsay evidence, authoritative opinion, etc. According to Findlay (1992), based on available theories, there are usually too many things going on at a time for an observer to observe all at once. Therefore the observer concentrates mostly on those things which interest him or that he considers important. He contends that an individual is in a better position to observe his own activities than an outside observer. This notion is important most particularly if we consider that an individual

is most privileged to assess temporary favorable or traumatic factors that might have contributed or affected his immediate level of competency as perceived by any observer. Most of the above discussion may lead the reader to conclude that self-assessment of the instructor/teacher would be more accurate than those of the independent observer. But, is this without its flaws?

The validity and usefulness of self-assessment rest on the premise that the subject knows himself and his own behaviour well enough to be able to report the truth. He must also be willing to tell the truth rather than distort it, (Findlay, 1992). Apart from the factor of truthfulness, different individuals (instructors) have different criteria standards for measuring competency. The differences in criteria may lead to over and or under assessment when one instructor is compared to another. The above becomes more critical and would influence the judgment of the instructors if they conceive evaluation as affecting their personal prestige.

Herzberg (1974) describe the idea that every school system or every teacher can today be regarded as capable of meaningful evaluation of his/her own performance as an absurdity. Instead, they suggest the use of academic and or professional evaluators as independent judges. This would result in establishing consistent criteria to define standards for measuring competency within the sample population. Since there is a myriad of arguments for and against self and independent evaluation, the probable third alternative is to combine both. A combination of self and independent assessment would strengthen the advantages of both, while each also compensate for the disadvantages of the other. Those competencies that show no significant differences under the two evaluation approaches can reasonably be assumed to represent the truth.

Further investigation might be necessary to determine the factors that are associated with such differences, i.e., the instructors might have rated themselves generally higher than the independent observers rated them in a particular competency because the instructors do not regard that competency as crucial. Hence, they may feel that they are performing very well within their perceived limited need of that competency. Additional investigations may show that competency is, in fact, not essential.

Curriculum planners may utilize the findings and recommendations of those competencies where the two evaluators show no significant difference for planning curricula that are aimed at improving the competency of instructors. However, if the philosophical position of the organization and or decision maker is in favor of professional or independent evaluator, then competencies where the greatest differences are observed signify those where instructors need to be upgraded. Chizari (1991) have documented the common sense notion that, a person can increase different perspectives and techniques in measuring a phenomenon the better will be the measurement.

The determination of what constitutes competency has provoked some level of disagreement. Nevertheless, many advocates of competency are quick to note that competency needs to have a performance outlet. Thus, competency is a cause of effective performance.

The success of an organization depends on the competency of its human resources. To be effective, extension personnel must possess the necessary skills, knowledge and attitude to work within the extension culture. Other factors related to professional

competencies include experience, age, demographic characteristics and general abilities. Even though many administrators stress the need for the evaluation of the competency of extension personnel for assessing the success or failure of the extension system many shy away from it. The method by which competency is measured is determined by the operational definition of competency and the ways it is reflected.

2.6.1: DEMONSTRATIONS

Hawkins (1974) stated that people like to see how an idea works or what the effects of a new practice are. The old cliché about a picture being worth more than a thousand words could be adapted quite appropriately to farm demonstrations that may be more valuable as extension aids than a hundred talks. The demonstration is a particularly powerful aid among illiterate or poorly educated people who are not accustomed to reading or learning from books. He further stressed that demonstrations give people the opportunity to compare old with new methods, to observe differences between recommended crop varieties and others, to check mechanized methods with labour intensive methods, and so on. A well-designed demonstration should “speak for itself”- that is to say, it must show farmers what they need to know without extra help from extension workers or without further discussion.

2.6.2: MEETINGS

In many countries farmers regularly hold meetings to which extension officers sometimes are invited. Conduct of meetings is quite formal, with officials elected, minutes of meetings kept and reports made to central bodies, regional headquarters

and so on. The effectiveness of these meetings as forums for exchange of ideas varies with the group and its leadership.

According to Rubin (1985), extension officers may participate in meetings in a number of different capacities. Apart from joining as normal members they may serve as committeeperson where their special training gives them insight into handling accounts. Furthermore, the extension officer may have access to printing or secretarial facilities, which can be used by the farmers' association for spreading technical information. At times an extension officer may be called upon to address a meeting as a guest technical speaker, or he may be asked to suggest as a speaker for a particular topic. The extension officer can also play important "follow up" role when the meeting has decided further information on a topic required. As part of his normal work, he may be able to obtain special technical information from research stations or from central libraries of his organization.

2.6.3 LECTURE

Lecture is probably one of the popular and most efficient and effective tools for presenting information. It may be to introduce a speaker at a field day, to give instructions or directions, or to provide technical information. According to Ready (1967), we are all accustomed to speaking face-to-face on the job or with our friends and family, but many of us find it very difficult to speak to a group without feeling nervous and awkward. Some of us experience feelings little short of panic if we are called upon to speak to a large group of colleagues at short notice. Careful preparation and practice will overcome most of these problems.

Ready (1967) further stated that, lecture can be a very useful and effective form of communication if performed skillfully. It further gives the extension worker the opportunity to demonstrate his enthusiasm and technical knowledge that can be used to help farmers. On the other hand, if a speaker is poorly prepared, has inadequate speaking skill or gives his talk in an uncomfortable or noisy situation his efforts are likely to be counter-productive.

2.7. EXTENSION TEACHING AIDS

Agricultural extension work is all about communication with the aim of providing to the audience appropriate information on useful technologies, and to teach skills that will help them to improve their productivity and efficiency. To do this effectively, extension workers need to design training programmes and carry them out using several methods and techniques. During these training programmes the extension worker is very much helped by extension teaching aids

Youdeowei and Kwarteng (1995) indicated that extension-teaching aids are print, audio, visual or audiovisual materials used in extension education to bring about more effective communication and learning.

2.8. THE CONCEPT OF EXTENSION

According to Van den Ban and Hawkins (1996), extension involves the conscious use of communication of information to help people form sound opinions and make good decisions. Although, early extension was not concerned with agriculture, it featured four elements common to modern agricultural extension programmers:

- The knowledge to be extended

- The people to be served
- A central extension organisation
- The extension agent –a contact man or woman. (Adams, 1988).

According to Roling (1990) the concept, the term and usage of extension is unhandy and imprecise. Van den Ban (1985) cited in Roling (1990) indicated that, in the United Kingdom, Germany and Scandinavia, the focus of extension is on advisory work. That is on solving specific problems, while in the American tradition the term extension education is used to emphasize that they are dealing with educational activity that seeks to teach people to solve problems by 'extending' information.

The term Agricultural Extension on the other hand, has come from the United States of America (U.S.A.) where it was used for the non-formal education for the farming communities (Adams, 1988). According to Buford and Bedeian (1988), agricultural extension is a system of non-formal educational practice usually directed at training farmers to access productivity enhancing technologies, practices and inputs. Generally agricultural extension aims at the following:

- Teaching farmers and rural communities how to identify and assess their own needs and problems.
- Helping farmers acquire the knowledge and skill required in coping with their needs.
- Inspiring them to action that will improve the qualities of their lives.

He concluded that, at its best, agricultural extension focuses on helping people to convince themselves of the benefits of scientific information, new technologies,

improved practices and alternative approaches to solving problems or managing their own affairs.

Agricultural extension also links farmers to research base and tested techniques, practices and inputs that are expected to benefit these farmers. Reactions against the 'top-down implication of some definitions of agricultural extension have led to many 'counter-terms', such as 'animation' 'mobilization' and 'conscientization' Hawkins (1974).

Roling (1990) stated that differences in terminology are the only source of confusion with respect to the concept 'extension'. Political and other traditions have also made considerable contributions. He stated that agricultural extension is expected to achieve different purposes depending on the policy of tradition within which it functions.

In the conservative tradition agricultural extension is seen as an instrument for helping people make well-considered choices among alternatives which extension has provided. The emphasis is on supporting the individual to make optimal decisions with respect to achieving his/her own goals. The individual is seen as free or not to use the extension information. In the socialist and Christian traditions, extension is seen as an instrument of emancipation and upliftment of the poor, a 'pedagogy of the oppressed', as Paulo Freire (1973) has called it.

The use of agricultural extension as a policy instrument for achieving societal objectives or collective utilities has been embraced by Governments in many countries (including Ghana); when it comes to inducing preventive behaviour with

respect to environmental degradation, health hazards etc. Van Woerkum, (1986) cited by Roling, (1990) stated that such preventive behaviour is in the interest of society as a whole or a future generation, but not necessarily in the short term interest of the individuals who are the target of such extension.

2.9. THE AGRICULTURAL EXTENSION AGENT (AEAs)

A great deal of responsibility for bringing about change in farmers and other clientele rest on the shoulders of the Agricultural Extension Agent (AEAs). The AEAs are the contact men and women on the field level and are simply the majority manpower resource of the Agricultural Extension System (AES).

The world wide percentage of extension personnel by position, as reported by Swanson, (1990) stood at 7 percent Administrative, 14 percent Subject Matter Specialist (SMS) and 79 percent Field staff. The ratio in terms of extension officer to farmer is 1:11 to 1:14 in Africa and Asia as compared to 1:1.6 for countries in Europe and America. This means that Asia and Africa are very low in terms of extension worker and farmer.

In Ghana, before the UES, AEAs formed about 85% of the total manpower resource of the extension system of which 7 % were females (DAES, 1997). There has been a significant change after the Unified Extension system. AEAs form about 90 percent of the total manpower resource, and of this only about 5 percent are females (UAES, 1999).

The AEA's are responsible for the implementation of extension programmes at the field level. Indeed, their effectiveness can often determine the success or failure of an extension programme, as they are the critical elements in all agricultural extension activities.

Oakley and Garforth (1985) and Benor, Harrison and Baxter, (1984) have asserted that the responsibilities of all other extension staff is ultimately to make the AEA's more effective in their work. Bradfield, (1966), stated the emerging role of the AEA is closer to that of a socio-economic community worker, than a technical expert.

Vijayaragaran and Singh, (1997), assigned three basic functions to the AEA's in general.

1. They make regular and systematic visits to villages and farms to develop report with the clientele to understand their problems,
2. They undertake educational activities in the form of meetings, campaigns, demonstrations, field days, training sessions and exhibitions,
3. They provide advisory services to farmers and solve their production problems.

Listed below are the duties/responsibilities of AEA's in Ghana's agricultural Extension System (UAES, 1997).

- Compile base line geo-climate, socio-cultural and economic (including agriculture) data on the area of operation.
- Identify or establish contact Farmer Groups for purposes of achieving wider coverage in crops, livestock, Fisheries and related activities or services.

- Prepare route maps and visit schedules in collaboration with the field supervisor.
- Assist farmers in the diagnosis of farm and farming related problems and advice on solution to such problems.
- Participate with Researchers and SMS in the establishment of On-Farm Adaptive Trials and collect relevant data for analysis by SMS or Researcher
- Assist farmers in the Establishment of Mini-Demos and arrange field days for contact groups and assess the result with farmers and SMS.
- Participate with SMS and Supervisors in the identification prioritization, and implementation of extension themes.
- Identify and forecast crop, livestock and fish pest and disease and advise or means of control with the development of all women specific programmers.
- Assist farmers in farm management education and practice in order to have cost effective farming enterprise.
- Participate with the Department of Co-operatives, NGOs etc. in the process of group formation and organization.
- Identify with educational institutions (JSS/SSS) and NGOs etc. in order to exchange view and collectively assists in the agricultural development in the locality.
- Assist farmers with information on availability of farm inputs, credit support and marketing.
- Undertake field level measurement, such as crop-cutting, etc. for purposes of productivity estimation, monitoring and evaluation.
- Provide feedback from farmers or agricultural related operators for management decision.

- Prepare daily log record of day's work and observation.
- Prepare and submit to the District Director of Food and Agriculture monthly and /or quarterly report through his/her Field Supervisor Officer.
- To undertake any other duties that may be assigned.

Nagel (1997) reported that while working conditions of AEAs have deteriorated, expectations with regards to their roles are increasing. They are no longer to be simple transmitters of technical knowledge, they are to practise participatory meetings, recognize and respect gender issues, identify indigenous need and solution to problems and serve as link to the world outside the village.

According to Antholth (1994) the following skills are required by AEAs in the 21st Century;

- The ability to work under complex and fluid circumstances with little supervision.
- The ability to diagnose farmers' problems and the willingness to do so effectively with farmers and farmers groups and
- The ability to present options based on principles of science and good agricultural practices, which widen the real choices available to farm families.

In cognisance of the above, Benor, et al (1984) indicated that agricultural extension system requires AEAs who are much motivated enough to diagnose the situation of their farmers together with them and who are capable of taking farmers together with them and who are capable of taking new initiative to develop new solutions to these problems. However, a World Bank report (1987) has earlier observed that AEAs in

most cases in Africa and Asia are unmotivated, demoralized and consequently not performing to the expectation of their organizations and Government.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1. GENERAL OVERVIEW

This chapter describes the research method used for the study. It covers the research design, the population, the study sample, instrumentation, data collection procedure, pilot study, main study and data analysis.

3.2. RESEARCH DESIGN

The study used a descriptive correlational design. This design is appropriate because it investigates existing status and possible relationships among variables without trying to influence those variables. Although, correlational studies cannot determine the causes of relationships, they can suggest them (Fraenkel and Wallen, 1990). In this study, information was collected from extension agents to establish the present perceived competency level and level of training needed in communication method and extension teaching aids. The design allowed the population of the study (AEAs) to be described based on the selected demographic characteristics.

3.3. POPULATION OF THE STUDY

The target population for the study was all the 125 Agricultural Extension Agents (AEAs) in the Greater Accra Region. Four districts (Ga, AMA, Tema and Dangme East) were randomly selected for the study. It was appropriate to select all the AEAs in the four districts since the population of interest was not too large.

3.4. INSTRUMENTATION

A validated ideal self-completion questionnaire (Appendix 1) was used for the collection of data. The questionnaire was in three parts. Part one consisted of structural questions on perceived competency level of AEAs in planning, implementation and evaluation of identified communication methods and extension teaching aids on a five (5) point Likert type scale. The scale ranged from poor (1) to excellent (5) for competency level and very little (1) to very much (5) for level of training needed. Part Two was designed to collect some background information from the AEAs. It covered selected demographic characteristics that included age, sex, years at position, educational qualification, years of experience in communication skills and training courses attended.

The third part was made up of two open-ended questions. The AEAs were requested to list the main hindrances in the use of communication methods and extension teaching aids in their district and also important suggestions to improve upon their competency level in the use of communication methods and extension teaching aids.

Content validity of the instruments was ensured by experts review. These experts were from the Department of Agricultural Economics and Extension, University of Cape Coast. They included the researcher's supervisor and his other supervisor.

3.5. PILOT STUDY

A pilot study was conducted in November 2003, using ten (10) AEAs in the Dangbe East district and fifteen (15) AEAs in the Adansi East district. The pilot test was run to determine the reliability of the instrument. To determine the internal consistency

coefficient of the instrument, Cronbach's alpha model was used for the perceived competency level scale and training needs scale.

The Cronbach alpha reliability analysis on an interval scale was done, which helped in the improvement on the overall alpha reliability co-efficient of items listed to measure specific variables of the study.

Table 2 shows the final alpha reliability co-efficient of the variables in the study. It ranges from 0.7442 to 0.8884 indicating that each section of the questionnaire was judged to be reliable.

Table 2: Number of items and alpha reliability co-efficient of the variables of the study

VARIABLES	NUMBER OF ITEMS	ALPHA RELIABILITY CO-EFFICIENT
Competency level in planning communication method	6	0.7442
Competency level in implementing communication method	6	0.7794
Competency level in evaluating communication method	6	0.7397
Level of training needed in planning communication method	6	0.7394
Level of training needed in implementing communication method	6	0.7733
Level of training needed in evaluating communication method	6	0.8249
Competency level in planning the use of extension teaching aids	9	0.7540
Competency level in implementing the use of extension teaching aids	9	0.8132
Competency level in evaluating the use of extension teaching aids	9	0.8545
Level of training needed in planning the use of extension teaching aids	9	0.8733
Level of training needed in implementing the use of extension teaching aids	9	0.8802
Level of training needed in evaluating the use of extension teaching aids	9	0.8884

3.6. DATA COLLECTION

The direct administration to a group method was the mode of data collection because access to all (or most) of the extension officers was possible. The instrument was administered to all extension officers in each of the four (4) districts at the same time and in the same place during training sessions. The chief advantage of this approach according to Fraenkel and Wallen (1990) is that, it gives the high rate of response; often close to 100% (usually in a single setting). Other advantages include a general low cost factor and the researcher has an opportunity to explain the study and answer any questions that the respondents may have before they complete the questionnaire. This facilitated the collection of the questionnaires for analysis.

The district directors made available their monthly meeting schedule dates, which made it possible for the researcher to meet all the AEA's. At such brief meetings the researcher stressed to the AEA's the need to respond to the questions in terms of their most sincere beliefs about their levels of competency and levels of training needed in the use of communication methods and teaching aids. These interactions were followed by distribution of the questionnaires, (a copy each to the AEA's). The respondents went through the questionnaire with the researcher for any further needed clarifications. The respondents were then asked to submit to the district director all the questionnaires on or before the next meeting day.

Two districts (Ga and AMA) achieved a hundred percent (100%) recovery with Tema and Dangbe West recording ninety-two percent (92%) and ninety-three percent (93%) recovery respectively (See Table 3).

Table 3. Distribution of Questionnaire and Response Rate

DISTRICT	NUMBER OF QUESTIONNAIRES	NUMBER OF QUESTIONNAIRE RECEIVED	PERCENTAGE RECEIVED
GA	35	35	100
ACCRA METROPOLITAN	35	35	100
TEMA	25	23	92
DANGBE WEST	30	28	93.1
TOTAL	125	121	96.8

Source: Survey Data, 2003

The high response rate in all the four districts may be due to the fact that, the questionnaires were administered (hand delivered) on appointed days to the extension agents in the districts by the researcher.

3.7. DATA ANALYSIS

Data from the questionnaires was coded and entered into Personal Computer Version of Statistical Package for the Social Science (SPSS/PC). Firstly, the following descriptive statistics: mean, percentages, frequencies, and standard deviations were computed to examine the general trends amongst the variables in the data set. Secondly, one-way factor analyses of variance (ANOVA) were performed to test the difference of means between the ratings by the extension agents of the selected communication methods and teaching aids in the selected districts.

To help describe AEAs on the selected demographic characteristics, data from the four (4) districts were combined and the means, mode, standard deviation, frequency distribution and corresponding percentage were computed.

To determine the perceived competency levels of AEAs in planning, implementation and evaluation of communication methods and teaching aids, the mean scores and standard deviations of responses of agents from the four (4) districts were computed.

To find out AEAs perceived level of training needed in communication methods and extension teaching aids in terms of planning, implementation and evaluation the mean scores and standard deviation of responses were computed.

The Pearson correlational coefficient was run to find out the relationship between AEAs socio-demographic characteristics and their overall perceived competency levels in the communication methods and extension teaching aids. Similarly, Analysis of Variance (ANOVA) was computed to examine the differences between the four districts in terms of AEAs perceived competencies level and training needed in communication methods and extension teaching aids.

For each test of significance, an alpha level of 0.05 was used. Important suggestions were listed by AEAs to improve their performance. The collated statements were ranked and their frequencies and corresponding percentages calculated using descriptive statistics.

CHAPTER FOUR

RESULTS AND DISCUSSION

INTRODUCTION

The major findings of the study are presented below in tabular forms and discussed accordingly from one objective to the other.

4.1. DEMOGRAPHIC CHARACTERISTICS OF AGRICULTURAL EXTENSION AGENTS

4.1.1. AGE DISTRIBUTION OF AGRICULTURAL EXTENSION AGENTS

This section focuses information on the first objective of the study. It presents the demographic profile of the Agricultural Extension Agents (AEAs).

Table 4 shows the age distribution of Agricultural Extension Agents (AEAs). The mean age was 40.9, which falls within 41-50 years range. The maximum age was fifty-nine years with a minimum of twenty-six years falling within the ranges of 51-60 and 21-30 respectively. The majority of the AEAs (55) fall within 31-40 years range, which constitutes 46.6%. Forty-six AEAs constituting 39.0 %, falls within the 41-50 years range follow this group. These two age groups constitute the bulk of AEAs that is one hundred and one representing 85.6%.

The least age range of 21-30 years has seven AEAs representing 5.9 %. Ten that is 8.5 % AEAs studied are above fifty-one years. The standard deviation (SD) of 6.72 is an indication of vast variations in individual agents age. The result shows that sixty-two (62) that is 52.5% of AEAs studied are below the mean age of 40.9, with fifty-six (56)

representing 47.5% of the AEAs studied are above forty (40) years. The results reveal that the staff studied are ageing.

Table 4. Age Distribution of Extension Agents.

AGE (IN YEARS)	FREQUENCY	PERCENTAGE	CUMULATIVE %
21-30	7	5.9	5.9
31-40	55	46.6	52.5
41-50	46	39.0	91.5
51-60	10	8.5	100.0
TOTAL	118	100.0	
MISSING CASES	3	2.5	

MEAN. = 40.9 MAX=59 years MIN. = 26 years. SD = 6.73

Source: Field Survey Data, 2003.

4.1.2 SEX DISTRIBUTION OF AGRICULTURAL EXTENSION AGENTS

As shown in Table 5, the majority (70.2 %) of AEAs studied were males whilst the female agents formed 28.9 % of the agents studied. According to the Ghana Statistical Services (1993), males are more likely to be educated than females in Ghana. Besides, there is a wide gap in educational attainment between the sexes. This could partly account for the high percentage of male extension workers, since a minimum level of education is required for entry into agricultural colleges to be trained as extension agents.

This result from Table 5 shows that the male/female ratio is about 1.3. This result agrees with the findings of Swanson (1990), where the ratio of female to male agents

in agriculture is low in Africa and Asia varying from 1:11 to 1: 14. The low ratio of female extensionist is seen as a tremendous problem in Ghana, where in most cases culture discourages interaction between married females and unmarried male AEAs. Swanson (1990) states that in most countries in Africa cultural norms circumscribe male – female interaction.

Table 5. Sex Distribution of Agricultural Extension Agents

SEX	FREQUENCY	PERCENTAGE	CUMULATIVE %
MALE	85	70.2	70.2
FEMALE	35	28.9	100.0
TOTAL	120	99.2	
MISSING CASES	1	0.8	

Source: Field Survey Data, 2003.

4.1.3 AGRICULTURAL EXTENSION AGENTS YEARS AT POSITION

Table 6 shows the length of time AEAs have stayed at their position. The mean length of years was 9.69. Thirty-six representing 30.51% of AEAs have stayed at their position between 1-5 years according to the study. The maximum length of years at position was thirty years with a minimum of one year. This indicates that the majority of the AEAs studied have stayed in their position for less than six years.

Table 6. Agricultural Extension Agents Years at Position.

YEARS AT POSITION	FREQUENCY	PERCENTAGE	CUMULATIVE %
1 - 5	36	30.51	30.5
6 - 10	33	27.96	58.5
11 - 15	35	29.66	88.1
16 - 20	8	6.78	94.9
21 - 25	5	4.24	99.2
26 - 30	1	0.85	100
TOTAL	118	97.5	
MISSING CASES	3	2.5	

MEAN = 9.69 MAX.= 30 years MIN. = 1 YEAR SD = 5.79

Source: Field Survey Data, 2003.

4.1.4. EDUCATIONAL LEVEL OF AGRICULTURAL EXTENSION AGENTS

Table 7 shows the educational level of the AEAs studied. Eighty-two AEAs (67.8 %) have Agricultural College Certificate from one of the recognized colleges in Ghana. Thirty-seven AEAs (30.6%) have either diploma or their first degree. It must be noted that the general certificate of Agriculture is the minimum qualification level for one to be employed as an AEA in MOFA presently.

The results confirm the statement made by Zinnah *et al* (1994) that "it is rare to find AEAs in Africa holding academic qualification higher than certificate or diploma in Agriculture".

It was observed that staff of the then Department of Extension were holders of certificate in general agriculture. The low level of educational qualification calls for more frequent and relevant in – service training for the AEs.

Adhikorya, (1989) found that, extension organizations do not function to full expectation in many developing countries because of their very low level of education mostly on the part of its frontline staff (AEAs).

Table 7. Educational level of Agricultural Extension Agents

QULIFICATION	FREQUENCY	PERCENTAGE	CUMULATIVE %
Agric College certificate	82	67.8	68.9
University certificate	37	30.6	100.0
TOTAL	119	98.3	
MISSING CASES	2	1.7	

MEAN = 1.31 SD = 0.46
Source: Field Survey Data 2003

4.1.5. AEAS YEARS OF EXPERIENCE IN COMMUNICATION SKILLS

The years of experience in communication skills of AEAs presented in Table 8 indicate that thirty-nine AEAs constituting 32.2% had experience in communication skills for ten to fourteen years. Another twenty-six (21.5%) AEAs who fall within the five-to-nine (5-9) years range follow this range. Seventeen representing 14.0% AEAs

have between 0-4 years experience in communication skills and nine representing (7.5%) AEAs have between 20 and 22) years experience.

These results show that seventy-four representing 61.2% AEAs studied have over nine years experience in communication skills. This together with a mean of 11.7 years indicates that the agricultural extension system has got matured and more experienced AEAs who are needed to carry out extension technologies to farmers for the pursuance of its goals and objectives. The standard deviation of 6.6 indicates great variations in individuals' years of experience in communication skills.

Table 8. AEAs Years of Experience in Communication Skills

RANGE (YEARS)	FREQUENCY	PERCENTAGE	CUMULATIVE %
0-4	17	14.0	14.5
5-9	26	21.5	36.8
10-14	39	32.2	70.1
15-19	20	16.6	87.2
20-24	9	7.5	94.9
25-29	3	2.4	97.4
30-34	3	2.5	100.0
TOTAL	117	96.7	
MISSING CASES	4	3.3	

MEAN=11.7 SD= 6.62 MAX= 30 MIN= 0.00

Source: Field survey data, 2003

4.1.6 AGRICULTURAL EXTENSION AGENTS TRAINING COURSES ATTENDED

AEAs had attended a number of training courses. As shown in table 9, 33.9 % of the AEAs studied have had the chance to attend two training courses. Ten AEAs (8.3 %) have not attended any training course. The study reveals that only one AEA had attended the highest number of training course. With the observed low level of educational qualification of AEAs one will be right to state that in-service training in MOFA is not enough. Seesang (1983) observed that appropriate in-service training is needed to maximise the effectiveness of agricultural development personnel.

It is obvious that the frequency and quality of training courses is likely to influence the level of competence of a participant. Various studies have cited insufficient in-service training as one reason why development workers and projects have failed to achieve their potentials (Allo and Sehwas, 1982; Seesang, 1983).

Table 9: Agricultural Extension Agents Training Courses Attended

NUMBER OF TRAINING COURSES	FREQUENCY	PERCENTAGE	CUMULATIVE %
0	10	8.3	8.5
1	13	10.7	19.5
2	41	33.9	54.2
3	21	17.4	72.0
4	7	5.8	78.0
5	12	9.9	88.1
6	4	3.3	91.5
8	3	2.5	94.1
10	3	2.5	96.6
12	1	0.8	97.5
15	1	0.8	98.3
20	1	0.8	99.2
24	1	0.8	100.0
TOTAL	118	97.5	
MISSING CASES	3	2.5	

MEAN = 3.35 MAX = 24 MINI = 0 SD = 3.50

Source: Field Survey Data, 2003.

4.2. AEAs Perceived Competency levels and their levels of Training needed in Communication Methods and Extension Teaching Aids in terms of Planning, Implementing and Evaluating.

Objectives 2 to 5 were to find the present levels of competencies of extension agents in the use of communication methods and extension teaching aids as well as their level of training needed in communication methods and extension teaching aids. A five point Likert-type scale ranging from one (1=poor competency) to five (5=excellent) was used for the competency levels and from one (1=very little) to five (5=very much) for level of training needed.

4.2.1 AEAs PERCEIVED COMPETENCY LEVELS IN PLANNING

COMMUNICATION METHODS

Table 10 shows the means, standard deviations, frequencies and percentages for the six selected communication methods. The overall mean response for the six selected items was 3.23 with a standard deviation of 0.93. These results show that the one hundred and twenty-one AEAs studied are good in planning communication methods. The standard deviation of 0.93 indicates that AEAs do not vary in their responses.

It is important to note that the AEAs competency level was good in planning field trips. About 50.4% of the respondents indicated that they were good in planning field trips. Only 3.3% of the respondents were poor in planning discussions and 6.6 % were excellent in planning field trips. These results could be attributed to the fact that AEAs, on their normal visitation schedules, do more field trips with their farmers rather than using other communication methods to deliver their extension technologies.

Table 10. AEs Perceived Competency Levels in Planning Communication**Methods**

Level of competency	MEAN	SD	FREQUENCY (PERCENTAGE)					TOTAL
			1	2	3	4	5	
What is your competency level in planning demonstrations?	3.36	0.98	3 (2.5)	19 (15.7)	46 (38.0)	37 (30.6)	16 (13.2)	121 (100.0)
What is your competency level in planning lectures?	3.28	0.87	2 (1.7)	18 (14.9)	55 (45.5)	36 (29.8)	10 (8.3)	121 (100.0)
What is your competency level in planning discussions?	3.41	0.98	2 (1.7)	14 (11.6)	60 (49.6)	22 (18.2)	23 (19.0)	121 (100.0)
What is your competency level in planning meetings?	3.30	0.92	2 (1.7)	19 (15.7)	54 (44.6)	32 (26.4)	14 (11.6)	121 (100.0)
What is your competency level in planning field trips?	2.95	0.89	4 (3.3)	31 (25.6)	61 (50.4)	17 (14.0)	8 (6.6)	121 (100.0)
What is your competency level in planning agricultural shows?	3.10	0.91	4 (3.3)	25 (20.7)	53 (43.8)	32 (26.4)	7 (5.8)	121 (100.0)
TOTAL	3.23	0.93						

1 = Poor, 2 = Fair, 3 = Good, 4 = Very good, 5 = Excellent.

Source: Field Survey Data, 2003

4.2.2 AEA's PERCEIVED COMPETENCY LEVELS IN IMPLEMENTING COMMUNICATION METHODS.

The results as depicted in Table 11 reveal that the one hundred and twenty-one AEA's studied had a mean value of 3.17 with a standard deviation of 0.82 on the items listed.

The frequencies indicated in Table 11 reveal that sixty-four respondents representing 52.9 % responded that they were good in implementing field trips. This has a mean value of 3.11 and a standard deviation of 0.79 indicating that AEA's do not vary much in their responses. Only one AEA's competency level was poor in implementing field trips. The result confirms the findings made by Leonard (1973) that field trips as an extension communication method help farmers to observe agricultural practices, projects or demonstrations not available locally. AEA's response indicates that they help farmers to observe more agricultural practices. Using this method, AEA's provide the farmers with first-hand opportunities to observe agricultural practices, interact with experts at other locations and fresh and different learning environment for both themselves (AEA's) and the farmers.

Table 11. AEAs Perceived Competency Levels in Implementing Communication

Methods.

Level of competency	MEAN	SD	FREQUENCY (PERCENTAGE)					TOTAL
			1	2	3	4	5	
What is your competency level in implementing demonstrations?	3.23	0.88	1 (0.8)	24 (19.8)	51 (42.1)	36 (29.8)	9 (7.4)	121 (100.0)
What is your competency level in implementing lectures?	3.14	0.78	1 (0.8)	22 (18.2)	62 (51.2)	31 (25.6)	5 (4.1)	121 (100.0)
What is your competency level in implementing discussions?	3.26	0.89	0 (0.0)	22 (18.2)	59 (48.8)	26 (21.5)	14 (11.6)	121 (100.0)
What is your competency level in implementing meetings?	3.21	0.81	0 (0.0)	22 (18.2)	59 (48.8)	32 (26.4)	8 (6.6)	121 (100.0)
What is your competency level in implementing field trips?	3.11	0.79	1 (0.8)	23 (19.0)	64 (52.9)	27 (22.3)	6 (5.0)	121 (100.0)
What is your competency level in implementing agricultural shows?	3.09	0.79	1 (0.8)	25 (20.7)	62 (51.2)	28 (23.1)	5 (4.1)	121 (100.0)
TOTAL	3.17	0.82						

1 = Poor, 2 = Fair, 3 = Good, 4 = Very good, 5 = Excellent.

Source: Field Survey Data, 2003

4.2.3 AEAs PERCEIVED COMPETENCY LEVELS IN EVALUATING COMMUNICATION METHODS

Table 12 depicts the total mean and standard deviation for AEAs competency level in evaluating communication methods as 3.09 and 0.93 respectively.

It was observed that sixty-three representing (52.1%) AEAs were good in evaluating agricultural shows that has a mean value of 3.06 and a standard deviation of 0.88. AEAs responded that they were poor in evaluating demonstrations, discussions and meetings. This could be attributed to the yearly agricultural shows where AEAs get directly involved and they are able to evaluate their own performance in organizing these shows.

Results from Tables 10, 11 and 12 show that in the Greater Accra Region, AEAs are good in planning and implementing field trips as well as good in evaluating agricultural shows.

Table 12. AEA's Perceived Competency Levels in Evaluating Communication

Methods

Level of competency	MEAN	SD	FREQUENCY (PERCENTAGE)					TOTAL
			1	2	3	4	5	
What is your competency level in evaluating demonstrations?	3.18	0.94	3 (2.5)	25 (20.7)	51 (42.1)	31 (25.6)	11 (9.1)	121 (100.0)
What is your competency level in evaluating lectures?	2.96	0.93	5 (4.1)	32 (26.4)	53 (43.8)	24 (19.8)	7 (5.8)	121 (100.0)
What is your competency level in evaluating discussions?	3.28	1.03	3 (2.5)	23 (19.0)	51 (42.1)	24 (19.8)	20 (16.5)	121 (100.0)
What is your competency level in evaluating meetings?	3.09	0.90	3 (2.5)	28 (23.1)	51 (42.1)	32 (26.4)	7 (5.8)	121 (100.0)
What is your competency level in evaluating field trips?	2.97	0.90	5 (4.1)	29 (24.0)	58 (47.9)	22 (18.2)	7 (5.8)	121 (100.0)
What is your competency level in evaluating agricultural shows?	3.06	0.88	4 (3.3)	23 (19.0)	63 (52.1)	23 (19.0)	8 (6.6)	121 (100.0)
TOTAL	3.09	0.93						

1= Poor, 2 = Fair, 3 = Good, 4 = Very good, 5 = Excellent

Source: Field Survey Data, 2003

4.3. Objective three of the study was to find out the AEsAs perceived levels of training needed in the use of communication methods in terms of planning, implementing and evaluating.

4.3.1 AEsAs PERCEIVED LEVELS OF TRAINING NEEDED IN PLANNING COMMUNICATION METHODS.

Six communication methods were related to level of training needed in terms of planning. From Table 13, 52 (43.0 %) AEsAs with a mean value of 3.82 and a standard deviation of 0.90 needed much training in planning meetings, whilst 1.7 % of the respondents needed very little training and 24.0 % needed very much training. Also 44.6 % of the AEsAs responded that their competency level was good with only 1.7 % of them responding a poor competency level. According to Hawkins (1974), it is worthy to note that AEsAs meet farmers and organize group meetings. In view of this, meetings include a range of formal activities such as agricultural shows; demonstrations and field days, as well as informal discussion groups, field tours and farm walks. When much training is given to the AEsAs as they have perceived, they can take advantage of demonstrating their skills in almost all the communication methods listed.

It was further observed that AEsAs needed much training in planning communication methods as indicated in Table 13. AEsAs perceived that they needed much training in planning meetings. According to Rogers (1971), meetings help in the exchange of ideas in communication. Table 13 shows that fifty-two respondents needed much training in planning meetings.

Agricultural shows, according to Roy and Rogers (1969), are one of the best methods in meeting farmers and other stakeholders to exhibit their produce. Table 13 shows that fifty-one of the AEAs needed some level of training in planning agricultural shows, thirty three needed much training and nineteen of them needed very much training in planning agricultural shows. This will help bring farmers together to exhibit their produce in order to get more information on new technology in agriculture. AEAs perceived that when their level of training in planning communication method is much, they could increase their skills.

Table 13. AEAs Perceived Levels of Training Needed in Planning Communication Methods

Level of training needed	MEAN	SD	FREQUENCY (PERCENTAGE)					TOTAL
			1	2	3	4	5	
What is your level of training needed in planning demonstrations?	3.90	1.00	1 (0.8)	9 (7.4)	34 (28.1)	34 (28.1)	43 (35.5)	121 (100.0)
What is your level of training needed in planning lectures?	3.68	0.94	3 (2.5)	5 (4.1)	45 (37.2)	42 (34.7)	26 (21.5)	121 (100.0)
What is your level of training needed in planning discussions?	3.69	0.98	4 (3.3)	7 (5.8)	37 (30.6)	47 (38.8)	26 (21.5)	121 (100.0)
What is your level of training needed in planning meetings?	3.82	0.90	2 (1.7)	6 (5.0)	32 (26.4)	52 (43.0)	29 (24.0)	121 (100.0)
What is your level of training needed in planning field trips?	3.50	0.97	4 (3.3)	11 (9.1)	45 (37.2)	42 (34.7)	19 (15.7)	121 (100.0)
What is your level of training needed in planning agricultural shows?	3.38	1.04	7 (5.8)	11 (9.1)	51 (42.1)	33 (27.3)	19 (15.7)	121 (100.0)
TOTAL	3.66	0.97						

1 = Very little, 2 = Little, 3 = Some, 4 = Much, 5 = Very much.

Source: Field Survey Data, 2003

4.3.2 AEAs PERCEIVED LEVELS OF TRAINING NEEDED IN IMPLEMENTING COMMUNICATION METHODS.

A grand mean of 3.59 and a standard deviation of 0.92 from Table 14 reveal that out of one hundred and twenty-one AEAs studied 43.0 % needed some level of training in implementing agricultural shows. According to Rogers (1971), agricultural shows well organized, serve as a form of mass method of communication. That is, several people can be reached from a single source. Some level of training as perceived by AEAs will eventually create awareness, because several people may be reached over a wide geographical area. During agricultural shows, farmers as well as AEAs, will seek additional information from sources such as neighbours, friends, successful farmers and other AEAs.

According to Table 11 and Table 14 AEAs competency level in agricultural shows was good they still needed some level of training respectively. According to Hawkins (1982), agricultural shows are useful method for creating awareness of government extension programmes among farmers who might not otherwise contact the extension service. He further stressed that agricultural shows represent a large investment of time and money with a poorly defined pay-off.

Table 14 shows that forty-five of the respondents needed much training in the implementation of demonstrations. Demonstration is a powerful aid among illiterates or poorly educated people who are not accustomed to reading or learning from books. It gives people the opportunity to compare old with new methods, to observe differences between recommended crop varieties and others, to check mechanized methods with labour intensive methods. A well-designed demonstration should,

"Speak of it Self" – that is to say; it should show farmers what they need to know without extra help from extension workers or without further discussion Shingi (1976). This concludes that AEAs need much training in implementing demonstrations.

Although according to Table 11, fifty-one AEAs (42.1%) indicated that their perceived competency level in implementing communication methods was good Table 14 recorded that they needed much training in implementing demonstrations.

Table 14 further revealed that fifty AEAs (41.3%) of the respondents needed much training in implementing lectures. According to Hawkins (1982), lecture is a form of public speaking that can be very useful and effective form of communication if performed skillfully. He further stressed that it gives the extension worker the opportunity to demonstrate his/her enthusiasm and technical knowledge that can be used to help farmers. On the other hand, if the extension worker is poorly prepared, has inadequate speaking skill or gives his/her talk in an uncomfortable or noisy situation his efforts are likely to be unproductive. According to Table 14 AEAs perceived that they needed much training in implementing lectures.

Table 14. AEAs Perceived Levels of Training Needed in implementing**Communication Methods**

Level of training needed	MEAN	SD	FREQUENCY (PERCENTAGE)					TOTAL
			1	2	3	4	5	
What is your level of training needed in implementing demonstrations ?	3.75	0.91	1 (0.8)	8 (6.6)	39 (32.2)	45 (37.2)	28 (23.1)	121 (100.0)
What is your level of training needed in implementing lectures?	3.75	0.87	1 (0.8)	7 (5.8)	38 (31.4)	50 (41.3)	25 (20.7)	121 (100.0)
What is your level of training needed in implementing discussions?	3.64	0.86	1 (0.8)	8 (6.6)	44 (36.4)	48 (39.7)	20 (16.5)	121 (100.0)
What is your level of training needed in implementing meetings?	3.68	0.97	4 (3.3)	7 (5.8)	37 (30.6)	48 (39.7)	25 (20.7)	121 (100.0)
What is your level of training needed in implementing field trips?	3.43	0.93	3 (2.5)	13 (10.7)	48 (39.7)	42 (34.7)	15 (12.4)	121 (100.0)
What is your level of training needed in implementing agricultural shows?	3.33	1.00	6 (5.0)	13 (10.7)	52 (43.0)	34 (28.1)	16 (13.2)	121 (100.0)
TOTAL	3.59	0.92						

1= Very little, 2 =little, 3 = some, 4 = Much, 5 = Very much.

Source: Field Survey Data, 2003

4.3.3 AEAs PERCEIVED LEVELS OF TRAINING NEEDED IN EVALUATING COMMUNICATION METHODS.

Table 15 indicates a grand mean of 3.55 and a standard deviation of 1.02. Fifty representing 41.3 % out of the one hundred and twenty-one AEAs studied indicated that they needed some level of training, thirty AEAs needed much level of training and twenty AEAs needed very much training in evaluating agricultural shows. According to Potter (1972), evaluation of extension programmes is important for a number of reasons. He revealed from his study that extension officers want to know whether they are doing a good job or whether they are meeting their objectives in their programmes. He concluded that job satisfaction is increased if one knows he/she is doing a good job. It is a myth that evaluation of programmes is for experts or it is an add-on activity. AEAs perceived that some level of training would increase their skills in evaluating their own effort in the organization of agricultural shows.

The results from Tables 13, 14, and 15 indicate that AEAs perceived that some level of training is needed in all the identified communication methods. According to Hartmut (1989), communication methods compose the techniques of communication between extension workers and target groups with the aim of motivating and enabling them to find ways of solving their problems. Depending on the particular method, communication can be on a mutual basis or one-way direction. There is the need therefore for AEAs to increase their competency level through training.

The discussions from objectives two (2) and three (3) focussed on the level of competency of extension agents as well as their level of training needed in communication methods in terms of planning, implementing and evaluating those

selected communication methods. It was evident that agents generally indicated that their competency level was good (3). This was observed from the mean values of 3.23, 3.17 and 3.09 with a standard deviation of 0.93, 0.82 and 0.93 for planning, implementing and evaluation respectively with a grand mean and standard deviation of 3.13 and 0.89. On their level of training needed in communication methods, it was revealed that AEAs needed much training.

The general observation, however, is that extension agents need much training in the selected communication methods in terms of planning, implementing and evaluating them. Furthermore, AEAs do not vary in their responses as shown by the standard deviations.

Communication methods compose the techniques of communication between extension workers and target groups with the aim of motivating and enabling them to find ways of solving their problems. Depending on the particular method, communication can be on a mutual basis or one-way directed. The methods used must be specifically adapted to circumstances, because the use of any communication technique depends on the number of people addressed, the problems to be solved and the capacity of the extension service. So, there is need for extension workers to increase their level of training in communication methods, Hartmut (1989).

**Table 15. AEs Perceived Levels of Training Needed in Evaluating
Communication Methods**

Level of training needed	MEAN	SD	FREQUENCY (PERCENTAGE)					TOTAL
			1	2	3	4	5	
What is your level of training needed in evaluating demonstrations?	3.62	1.0	5 (4.1)	12 (9.9)	32 (26.4)	46 (38.0)	26 (21.5)	121 (100.0)
What is your level of training needed in evaluating lectures?	3.62	0.9	3 (2.5)	11 (9.1)	39 (32.2)	43 (35.5)	25 (20.7)	121 (100.0)
What is your level of training needed in evaluating discussions?	3.58	0.9	4 (3.3)	7 (5.8)	44 (36.4)	46 (38.0)	20 (16.5)	121 (100.0)
What is your level of training needed in evaluating meetings?	3.63	1.0	4 (3.3)	10 (8.3)	39 (32.2)	41 (33.9)	27 (22.3)	121 (100.0)
What is your level of training needed in evaluating field trips?	3.48	1.0	6 (5.0)	11 (9.1)	45 (37.2)	40 (33.1)	21 (17.4)	121 (100.0)
What is your level of training needed in evaluating agricultural shows?	3.58	1.0	8 (6.6)	11 (9.1)	50 (41.3)	30 (24.8)	22 (18.2)	121 (100.0)
TOTAL	3.55	1.02						

1=Very little, 2=Little, 3=Some, 4=Much, 5=Very much.

Source: Field Survey Data, 2003

4.4. Objective four was to find out the perceived competency levels of AEs in the use of some selected extension-teaching aids in terms of planning, implementing and evaluating.

4.4.1 AEs PERCEIVED COMPETENCY LEVELS IN PLANNING EXTENSION TEACHING AIDS

Nine extension-teaching aids were listed to find AEs perceived competency levels in using them. The means, standard deviations, frequencies and percentages are presented in Table 16. The overall means for these nine extension-teaching aids were 3.02 with a standard deviation of 0.98. Out of the one hundred and twenty-one AEs studied, sixty-six (54.5%) AEs responded that their competency level was good in planning the use of folders and fifteen (12.4 %) of them with their competency level being poor in planning the use of folders. Table 16 further shows that fourteen representing 11.6 % were excellent in planning the use of flip charts and fifteen representing 12.4 % were poor in planning the use of video.

Parkin (1972) stated that in selecting any extension teaching aids by extension worker, there is the need to plan which kind of activities to be undertaken. Modern extension services encourage their officers to plan their activities rather than have them wait for farmers' call for help or advice. He further stressed that most extension workers plan their work to some extent, though not all do so systematically by analyzing the situation, deciding on objectives and drawing up a work plan where the type of teaching aid need to be used. According to Hawkins (1982), a well-equipped extension organisation will have a wide range of extension aids for its officers to use, where the extension worker after planning will have to choose a particular aid or

variety of aids to suit a specific communication situation. AEA's choice according to Hawkins (1982), will depend on his/her objectives-whether he/she is trying to teach skills or bring awareness, on the aids that are available.

Rogers (1971) stated that printed materials in the form of handouts have been an important extension aid for many years. They may be produce as a single topic publication to explain the advantages and disadvantages of a practice. They also may be used as a series of related publications to explain in detail some form of agricultural production.

Table 16. AEA's Perceived Competency Levels in planning the use of Extension

Teaching Aids

Level of competency	MEAN	SD	FREQUENCY (PERCENTAGE)					TOTAL
			1	2	3	4	5	
What is your competency level in planning the use of flip charts?	3.25	1.09	10 (8.3)	16 (13.2)	42 (34.7)	38 (31.4)	14 (11.6)	120 (100.0)
What is your competency level in planning the use of video?	2.75	1.09	15 (12.4)	35 (28.9)	45 (37.2)	15 (12.4)	10 (8.3)	120 (100.0)
What is your competency level in planning the use of booklet?	3.15	0.89	3 (2.5)	21 (17.4)	61 (50.0)	25 (20.7)	10 (8.3)	120 (100.0)
What is your competency level in planning the use of overhead projector?	2.95	1.05	11 (9.1)	30 (24.8)	39 (32.2)	34 (28.1)	6 (5.0)	120 (100.0)
What is your competency level in planning the use of posters?	2.88	0.95	12 (9.9)	20 (16.5)	64 (52.9)	18 (14.9)	6 (5.0)	120 (100.0)
What is your competency level in planning the use of folders?	2.95	0.80	5 (4.1)	24 (19.8)	66 (54.5)	22 (18.2)	3 (2.5)	120 (100.0)
What is your competency level in planning the use of pamphlets?	3.14	1.05	6 (5.0)	25 (20.7)	49 (40.5)	24 (19.8)	15 (12.4)	120 (100.0)
What is your competency level in planning the use of radio?	3.07	0.94	7 (5.8)	21 (17.4)	55 (45.5)	30 (24.8)	7 (5.8)	120 (100.0)
What is your competency level in planning the use of newspaper?	3.04	0.99	8 (6.6)	27 (22.3)	43 (35.5)	36 (29.8)	6 (5.0)	120 (100.0)
TOTAL	3.02	0.98						

1 = Poor, 2 = Fair, 3 = Good, 4 = Very good, 5 = Excellent.

Source: Field Survey Data, 2003

4.4.2 AEA's PERCEIVED COMPETENCY LEVELS IN IMPLEMENTING EXTENSION TEACHING AIDS

For perceived competency level in implementing extension teaching aids the overall mean and standard deviation for the nine extension teaching aids were 2.92 and 0.93 respectively. Table 17 shows that sixty-six representing 54.5 % AEA's perceived that their level in implementing the use of folders was good and twelve (12) representing 9.9% perceived that their competency level in implementing the use of video was poor with nine (9) representing 7.4% responding excellent competency in both flip charts and video.

Dale (1969) in his study stated that despite the rapid spread and enormous popularity of video as a news and entertainment medium, it has with a few notable exceptions, played a relatively minor role in extension services where AEA's perceived that their competency level in implementing it is poor. Video is an attractive medium because of its capacity to provide information simultaneously through visual and aural channels without requiring its audience to be literate. Despite this development, he further stated that it remains an expensive medium for producers and associated with the preparation and broadcast of local programmes have forced many organizations in developing countries to rely on programmes purchased from the industrial countries.

Hawkins (1974) stated that in common with newspapers, posters and radio, video television tends to be directed towards the urban masses. Reception often is limited to a short radius around the capital cities, although technology and the development of repeater stations have brought video television signals within reach of a high proportion of citizen in many countries.

Table 17 further shows that A&Es perceived competency in implementing the use of radio was good, that is fifty-two representing 43.0%. Hawkins (1974) stated that, development of battery-powered transistor radio has had considerable impact on extension services all over the world. Farmers now are more likely to have a radio with them when they work. He further stated that extension workers could make radio a very personal as well as a mass medium. They create the illusion to the listener that they are talking personally to him.

Table 17. AEAs Perceived Competency Levels in Implementing Extension

Teaching Aids

Level of competency	MEAN	SD	FREQUENCY (PERCENTAGE)					TOTAL
			1	2	3	4	5	
What is your competency level in implementing the use of flip charts?	3.05	1.01	9 (7.4)	23 (19.0)	50 (41.3)	29 (24.0)	9 (7.4)	120 (100.0)
What is your competency level in implementing the use of video?	2.72	1.04	12 (9.9)	41 (33.9)	44 (36.4)	14 (11.6)	9 (7.4)	120 (100.0)
What is your competency level in implementing the use of booklet?	3.03	0.87	2 (1.7)	32 (26.4)	52 (43.0)	28 (23.1)	6 (5.0)	120 (100.0)
What is your competency level in implementing the use of overhead projector?	2.86	1.05	11 (9.1)	34 (28.1)	43 (35.5)	24 (19.8)	8 (6.6)	120 (100.0)
What is your competency level in implementing the use of posters?	2.75	0.86	10 (8.3)	31 (25.6)	60 (49.6)	17 (14.0)	2 (1.7)	120 (100.0)
What is your competency level in implementing the use of folders?	2.88	0.74	4 (3.3)	28 (23.1)	66 (54.5)	20 (16.5)	1 (0.8)	120 (100.0)
What is your competency level in implementing the use of pamphlets?	3.01	0.91	5 (4.1)	26 (21.5)	57 (47.1)	24 (19.8)	7 (5.8)	120 (100.0)
What is your competency level in implementing the use of radio?	3.01	0.92	5 (4.1)	28 (23.1)	52 (43.0)	28 (23.1)	6 (5.0)	120 (100.0)
What is your competency level in implementing the use of newspaper?	2.95	0.98	8 (6.6)	29 (24.0)	52 (43.0)	23 (19.0)	8 (6.6)	120 (100.0)
TOTAL	2.92	0.93						

1= Poor, 2 = Fair, 3 = Good, 4 = Very good, 5 = Excellent.

Source: Field Survey Data, 2003

4.4.3 AEA's PERCEIVED COMPETENCY LEVELS IN EVALUATING EXTENSION TEACHING AIDS

Table 18 showed a grand mean for the whole nine-selected extension teaching aids as 2.91 and a standard deviation of 0.99. Fifty-four representing 44.6% of the AEA's perceived that their competency level was good in evaluating newspapers, folders and posters, but poor in evaluating the use of over-head projector of a frequency of thirteen representing 10.7%. Twelve representing 9.9% of the AEA's responded that they are excellent in evaluating video.

Hartmut et al (1989) stated that evaluation should tell us whether there is a better way of implementing extension-teaching aids. It helps the user to monitor the programme. That is drawing the attention of the extension worker to difficulties in running programmes. Thirteen, (10.7%) respondents indicated that they are poor in evaluating overhead projectors. Table 18 further revealed that five AEA's indicated that they are poor in evaluating the use of radio. Though apart from AEA's competency level in evaluating the use of video, forty respondents representing 33.1% indicated fair response. This means their competency level in evaluating the other selected teaching aids was good.

A good extension officer according to Hawkins (1982) should possess certain qualities of technical and social competence if he is to carry out his work effectively. If he is to have credibility with a farmer, that is to be respected as knowledgeable and trustworthy source of information, he must have technical competency in the use of extension teaching aids.

Table 18. AEs Perceived Competency Levels in Evaluating Extension Teaching

Aids

Level of competency	MEAN	SD	FREQUENCY (PERCENTAGE)					TOTAL
			1	2	3	4	5	
What is your competency level in evaluating the use of flip charts?	2.96	1.09	12 (9.9)	26 (21.5)	47 (38.8)	24 (19.8)	11 (9.1)	120 (100.0)
What is your competency level in evaluating the use of video?	2.80	1.11	12 (9.9)	40 (33.1)	39 (32.2)	17 (14.0)	12 (9.9)	120 (100.0)
What is your competency level in evaluating the use of booklet?	2.99	1.00	6 (5.0)	33 (27.3)	47 (38.8)	24 (19.8)	10 (8.3)	120 (100.0)
What is your competency level in evaluating the use of overhead projector?	2.88	1.09	13 (10.7)	30 (24.8)	45 (37.2)	22 (18.2)	10 (8.3)	120 (100.0)
What is your competency level in evaluating the use of posters?	2.67	0.88	11 (9.1)	37 (30.6)	54 (44.6)	16 (13.2)	2 (1.7)	120 (100.0)
What is your competency level in evaluating the use of folders?	2.87	0.88	6 (5.0)	33 (27.3)	54 (44.6)	22 (18.2)	4 (3.3)	120 (100.0)
What is your competency level in evaluating the use of pamphlets?	3.00	0.99	7 (5.8)	28 (23.1)	50 (41.3)	25 (20.7)	9 (7.4)	120 (100.0)
What is your competency level in evaluating the use of radio?	3.03	0.91	5 (4.1)	27 (22.3)	53 (43.8)	29 (24.0)	6 (5.0)	120 (100.0)
What is your competency level in evaluating the use of newspaper?	3.00	0.99	11 (9.1)	19 (15.7)	54 (44.6)	30 (24.8)	6 (5.0)	120 (100.0)
TOTAL	2.91	0.99						

1= Poor, 2 = Fair, 3 = Good, 4 = Very good, 5 = Excellent.

Source: Field Survey Data, 2003

4.5. Objective five was to find out the AEA's perceived levels of training needed in extension teaching aids in terms of planning, implementing and evaluating.

4.5.1 AEA'S PERCEIVED LEVELS OF TRAINING NEEDED IN PLANNING EXTENSION TEACHING AIDS

Nine extension-teaching aids were identified in the level of training needed by AEA's in planning of extension teaching aids. The means, standard deviations, frequencies and percentages are presented in Table 19. The overall means and standard deviation for the nine extension teaching aids were 3.02 and 0.98 respectively.

As shown by the frequencies and the percentages, fifty-four (44.6%) AEA's out of one hundred and twenty-one responded that they need some level of training in planning the use of radio. Table 19 further reveals that fifteen (12.4%) of them need very little training in planning the use of posters and twenty-eight (23.1%) need very much training in planning the use of flip charts.

Though, Table 16 shows that the AEA's competency level in planning extension-teaching aids was good they still need some level of training. This may be due to the private radio station in almost all the districts in the study area.

Table 19. AEA's Perceived Levels of Training needed in Planning Extension

Teaching Aids

Level of Training needed	MEAN	SD	FREQUENCY (PERCENTAGE)					TOTAL
			1	2	3	4	5	
What is your level of training needed in planning the use of flip charts?	3.59	1.03	3 (2.5)	12 (9.9)	44 (35.5)	33 (27.3)	28 (23.1)	120 (100.0)
What is your level of training needed in planning the use of video?	3.40	1.14	5 (4.1)	26 (21.5)	27 (22.3)	39 (32.2)	23 (19.0)	120 (100.0)
What is your level of training needed in planning the use of booklet?	3.39	1.03	5 (4.1)	13 (10.7)	53 (43.8)	28 (23.1)	21 (17.4)	120 (100.0)
What is your level of training needed in planning the use of overhead projector?	3.40	1.09	6 (5.0)	18 (14.9)	39 (32.2)	36 (29.8)	21 (17.4)	120 (100.0)
What is your level of training needed in planning the use of posters?	3.07	1.23	15 (12.4)	26 (21.5)	30 (24.8)	33 (27.3)	16 (13.2)	120 (100.0)
What is your level of training needed in planning the use of folders?	2.95	1.23	14 (11.6)	36 (29.8)	27 (22.3)	27 (22.3)	16 (13.2)	120 (100.0)
What is your level of training needed in planning the use of pamphlets?	3.59	1.00	3 (2.5)	14 (11.6)	35 (28.9)	45 (37.2)	23 (19.0)	120 (100.0)
What is your level of training needed in planning the use of radio?	3.45	0.98	4 (3.3)	10 (8.3)	54 (44.6)	31 (25.6)	21 (17.4)	120 (100.0)
What is your level of training needed in planning the use of newspaper?	3.53	0.93	5 (4.1)	4 (3.3)	51 (42.1)	42 (34.7)	18 (14.9)	120 (100.0)
TOTAL	3.37	1.07						

1=Very little, 2= Little, 3=Some, 4=Much, 5 = Very much.

Source: Field Survey Data, 2003

4.5.2 AEAs PERCEIVED LEVELS OF TRAINING NEEDED IN IMPLEMENTING EXTENSION TEACHING AIDS

The means, standard deviations, frequencies and percentages of the nine identified extension teaching aids are presented in Table 20. The grand mean and standard deviation for the perceived level of training needed in implementing extension teaching aids were 3.32 and 1.09 respectively.

Table 20 reveals that fifty-six (46.3%) needed some level of training in implementing the use of radio. From Table 17, fifty-two (43.0%) AEAs perceived competency level in implementing the use of radio was good they still need some training.

Table 20 further reveals that fourteen (11.6%) of the AEAs needed very little training in both posters and folders. This may be attributed to the fact that they do not use posters and folders often to carry out agricultural information to their clientele, but instead they needed some level of training in the implementation of the use of radio where they can reach many people at a particular time.

Table 20. AEAs Perceived Levels of Training needed in Implementing Extension

Teaching Aids

Level of training needed	MEAN	SD	FREQUENCY (PERCENTAGE)					TOTAL
			1	2	3	4	5	
What is your level of training needed in implementing the use of flip charts?	3.51	0.99	3 (2.5)	12 (9.9)	48 (38.8)	35 (28.9)	22 (18.2)	120 (100.0)
What is your level of training needed in implementing the use of video?	3.27	1.14	8 (6.6)	23 (19.0)	36 (29.8)	34 (28.1)	19 (15.7)	120 (100.0)
What is your level of training needed in implementing the use of booklet?	3.42	1.00	2 (1.7)	18 (39.7)	31 (25.6)	21 (17.4)	10 (8.3)	120 (100.0)
What is your level of training needed in implementing the use of overhead projector?	3.37	1.11	4 (3.3)	26 (21.5)	33 (27.3)	35 (28.9)	22 (18.2)	120 (100.0)
What is your level of training needed in implementing the use of posters?	3.05	1.26	14 (11.6)	32 (26.4)	27 (22.3)	28 (23.1)	19 (15.7)	120 (100.0)
What is your level of training needed in implementing the use of folders?	2.96	1.26	14 (11.6)	36 (29.8)	29 (24.0)	22 (18.2)	19 (15.7)	120 (100.0)
What is your level of training needed in implementing the use of pamphlets?	3.51	1.07	4 (3.3)	18 (14.9)	34 (28.1)	40 (33.1)	24 (19.8)	120 (100.0)
What is your level of training needed in implementing the use of radio?	3.35	0.98	6 (5.0)	10 (8.3)	56 (46.3)	32 (26.4)	16 (13.2)	120 (100.0)
What is your level of training needed in implementing the use of newspaper?	3.48	1.00	5 (4.1)	10 (8.3)	47 (38.8)	38 (31.4)	20 (16.5)	120 (100.0)
TOTAL	3.32	1.09						

1=Very little, 2= Little, 3=Some, 4=Much, 5 = Very much.

Source: Field Survey Data, 2003

4.5.3. AEAS PERCEIVED LEVELS OF TRAINING NEEDED IN EVALUATING EXTENSION TEACHING AIDS

Nine teaching aids were listed under the perceived level of training needed in evaluating extension-teaching aids. Generally majority of the AEAs need training in evaluating the use of radio. Table 18 revealed that fifty-three (43.8%) AEAs competency level was good in evaluating the use of radio. At the same time, according to the frequency values, fifty-eight (47.9%) AEAs perceived that they needed some level of training to increase their competency level. The nine selected teaching aids had an overall mean of 3.32 and a standard deviation of 1.11.

The general discussions from objectives four (4) and five (5) focussed on the level of competency of extension agents as well as their level of training needed in the nine selected extension teaching aids in terms of planning, implementing and evaluating them.

It was evident that AEAs generally indicated that their competency level was good. This was observed from the mean values of 3.02, 2.92 and 3.32 with a standard deviation of 0.98, 0.93 and 1.11 (planning, implementing and evaluation respectively) with a grand mean and standard deviation of 3.08 and 1.00 respectively.

Considering their level of training needed in the selected extension teaching aids it was revealed that AEAs needed some level of training in extension teaching aids. This was observed from the means of 3.37, 3.32 and 2.91 and the standard deviations of 1.07, 1.09 and 0.99 respectively in terms of planning, implementing and evaluating them. These gave a grand mean and standard deviation of 3.20 and 1.05 respectively.

The general observation, however, was that the extension agent is perceived as having a good (3) level of competency and needed some level of training in the selected extension teaching aids in terms of planning, implementing and evaluating them.

Table 21. AEs Perceived Levels of training needed in Evaluating Extension

Teaching Aids

Level of training needed	MEAN	SD	FREQUENCY (PERCENTAGE)					TOTAL
			1	2	3	4	5	
What is your level of training needed in evaluating the use of flip charts?	3.54	1.05	4 (2.5)	14 (11.6)	45 (37.2)	29 (24.0)	28 (23.1)	120 (100.0)
What is your level of training needed in evaluating the use of video?	3.35	1.17	7 (5.8)	24 (19.8)	31 (25.6)	35 (28.9)	23 (19.0)	120 (100.0)
What is your level of training needed in evaluating the use of booklet?	3.54	1.05	2 (1.7)	18 (14.9)	40 (33.1)	33 (27.3)	27 (22.3)	120 (100.0)
What is your level of training needed in evaluating the use of overhead projector?	3.49	1.13	5 (4.1)	20 (16.5)	32 (26.4)	37 (30.6)	26 (21.5)	120 (100.0)
What is your level of training needed in evaluating the use of posters?	3.10	1.31	17 (14.0)	26 (21.5)	26 (21.5)	30 (24.8)	21 (17.4)	120 (100.0)
What is your level of training needed in evaluating the use of folders?	3.05	1.31	14 (11.6)	35 (28.9)	24 (19.8)	24 (19.8)	23 (19.0)	120 (100.0)
What is your level of training needed in evaluating the use of pamphlets?	3.00	1.06	4 (3.3)	13 (10.7)	41 (33.9)	34 (28.1)	28 (23.1)	120 (100.0)
What is your level of training needed in evaluating the use of radio?	3.32	1.02	7 (5.8)	10 (8.3)	58 (47.9)	27 (22.3)	18 (14.9)	120 (100.0)
What is your level of training needed in evaluating the use of newspaper?	3.56	0.97	4 (3.3)	8 (6.6)	46 (38.0)	40 (33.1)	22 (18.2)	120 (100.0)
TOTAL	3.32	1.11						

1=Very little, 2= Little, 3=Some, 4=Much, 5 = Very much.

Source: Field Survey Data, 2003

4.6. RELATIONSHIPS BETWEEN AEAs SOCIO DEMOGRAPHIC CHARACTERISTICS AND THEIR TOTAL PERCEIVED COMPETENCY LEVELS

Objective 6 sought to describe the relationships between AEAs selected demographic characteristics and their total competency levels in communication methods and extension teaching aids.

4.6. RELATIONSHIP BETWEEN SOCIO DEMOGRAPHIC CHARACTERISTICS OF AEAs AND THEIR TOTAL COMPETENCY LEVELS

Results from Table 22 indicate that there was a negative and low association between AEAs years at position and total competency in evaluating extension-teaching aids was $-.23^*$ as indicated by the coefficient of correlation. The negative relationship indicates that high scores on one variable tend to go with low scores on the other variable. This means, there is a negative relationship between AEAs years at position and their total competency in evaluating extension teaching aids. These results could be due to the fact that AEAs studied do not have access in using extension teaching aids no matter the number of years they have stayed at their position. It could further be attributed to the fact that extension-teaching aids are not available in their various districts.

Table 22 further revealed a positive but low association between AEAs training courses attended and total competency in planning communication methods was $.19^*$ as indicated by the coefficient of correlation and also with the total competency in implementing communication methods ($.19^*$). The positive directions implies that as AEAs training courses attended increases, their competency levels in planning and implementing communication methods also increase. The results support the

statement made by Bansal (1991) that the success of an organisation depends on a large extent the capability, competency, efficiency and effectiveness of its human resource base. This implies that, the human resource development system is an essential tool of management in order to develop capability, competency and responsibility among the employees. Kulkani (1985) observed that competency of employees is an aid to the efficient running of an enterprise. This could be achieved through regular training.

The null hypothesis states that no significant relationship exists between AEAs socio demographic characteristics and their total competency in planning communication methods. The correlation analysis indicates that there was no relationship. The null hypothesis therefore was accepted.

Table 22. Pearson correlation matrix between AEAs selected demographic characteristics and total competency level in communication methods and extension teaching aids.

	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12
V1	1.00											
V2	-.05	1.00										
V3	-.01	.25**	1.00									
V4	.16	-.00	-.14	1.00								
V5	.00	.59**	.27**	.00	1.00							
V6	-.23*	-.11	-.12	-.13	-.18	1.00						
V7	-.02	.01	-.17	-.07	-.04	.19	1.00					
V8	-.08	-.06	-.13	-.06	-.05	.19*	.66**	1.00				
V9	-.11	-.05	-.07	-.02	-.04	.11	.37**	.78**	1.00			
V10	-.05	.00	-.18	.16	.06	-.05	.77**	.38**	.78**	1.00		
V11	.07	.08	-.19*	.11	-.02	-.10	.44**	.35**	.38**	.725**	1.00	
V12	.03	-.01	-.23*	.05	-.02	-.09	.33**	.32**	.31**	.66**	.77**	1.00

Source: Field Survey Data. 2003.

*P< .05, **P< .01

V1- Sex, V2- Age, V3- Years at position, V4- Educational Level, V5- Years of experience in communication skills, V6- Training courses attended, V7 total competency in planning communication methods, V8 total competency in implementing communication methods, V9 total competency in evaluating communication methods, V10-total competency in planning extension teaching aids, V11-total competency in implementing extension teaching aids, V12-total competency in evaluating extension teaching aids.

Objective 7 sought to describe the relationships between AEA's demographic characteristics and their total levels of training needed in communication methods and extension teaching aids.

4.7. RELATIONSHIPS BETWEEN AEA's SOCIAL DEMOGRAPHIC CHARACTERISTICS AND THEIR TOTAL LEVELS OF TRAINING NEEDED

Results from Table 23 show that there was positive direction with low association between sex of AEA's and their total training needed in planning extension-teaching aids (.19*). This indicates that high scores on the variable sex tend to go with high scores on the level of training needed in planning extension-teaching aids.

Table 23 further indicates a negative direction with a low association between years at position and AEA's total training needed in implementing extension teaching aids (-.19*). This means that, as AEA's total training needed do not correspond with their number of years at position. These results from the study could be due to the fact that as they stay at a particular position for a period of time they gain experience and they are not interested in further training in implementing extension teaching aids.

The result supports the findings of Findlay (1992) on educational needs revealed that Secondary Vocational agriculture teachers perceived themselves as having a majority of professional competencies as they have been at a particular position for a period of years and need no further training.

The null hypothesis was accepted because it stated that there is no relationship between AEA's selected demographic characteristics and their total training level needed in planning communication methods.

Table 23. Pearson correlation matrix between AEA's socio demographic characteristics and their total training level needed in communication methods and extension teaching aids.

	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12
V1	1.00											
V2	-.05	1.00										
V3	-.01	.25**	1.00									
V4	.16	-.00	-.14	1.00								
V5	.00	.59**	.27**	.00	1.00							
V6	-.23*	-.11	-.12	-.13	-.18	1.00						
V7	.06	.04	-.16	.02	.07	-.12	1.00					
V8	.11	.04	-.11	.14	.08	-.15	.79**	1.00				
V9	.14	.09	-.09	.08	.05	-.16	.73**	.75**	1.00			
V10	.19*	.13	.00	.03	.15	-.14	.43**	.40**	.48**	1.00		
V11	.07	.08	-.19*	.11	-.02	-.10	.26**	.25**	.26**	.17	1.00	
V12	.17	.07	.09	-.03	.16	-.12	.33**	.38**	.49**	.76**	.12	1.00

Source: Field Survey Data, 2003. *P< .05, **P< .01

V1- Sex, V2- Age, V3- Years at position, V4- Educational Level, V5- Years of experience in communication skills, V6- Training courses attended, V7 total training level needed in planning communication methods, V8-total training level needed in implementing communication methods, V9-total training level needed in evaluating communication methods, V10-total training level needed in planning extension teaching aids, V11-total training level needed in implementing extension teaching aids, V12-total training level needed in evaluating extension teaching aids.

4.8. RELATIONSHIPS BETWEEN AEAs TOTAL COMPETENCY LEVEL AND THE LEVEL OF TRAINING NEEDED

Objective eight sought to find the relationships between AEAs total competency level and their level of training needed in communication methods in terms of planning, implementing and evaluating.

4.8. AEAs TOTAL COMPETENCY LEVEL AND THEIR LEVEL OF TRAINING NEEDED IN THE COMMUNICATION METHODS

Table 24 shows a high significant and positive association between AEAs competency level in planning and their level of training needed in planning (.774**). Likewise, there was a high significant and positive and strong association between their competency level in implementing communication methods and their level of training needed in implementing them (.784**) and also substantial association in evaluating communication methods (.664**). AEAs competency level in communication methods showed a high significant, positive and strong association with their level of training needed (.733**).

The results mean that AEAs competency level could be increased through training. It further indicates that increasing the quality of extension staff knowledge and skills in communication methods is a high priority for many natural extension systems (Swanson, 1990). According to Easter (1985), training of extension personnel has been the inability to focus on the development of professional competencies.

Salmansadeh,(1988) also indicated that attainment of agricultural self-sufficiency requires competent extension personnel in planning, implementing and evaluating through training in communication methods so as to carry out educational programmes to meet farmers needs. The alternate hypothesis therefore was accepted because it stated that there is significant association between AEAs total perceived competency level and the level of training needed in communication methods.

Table 24. Pearson correlational matrix between AEAs total competency level and the level of training needed in communication methods.

	V1	V2	V3	V4	V5	V6
V1	1.000					
V2	.095	1.000				
V3	.099	.099	1.000			
V4	.774**	.010	.155	1.000		
V5	.750**	.784**	.103	.183	1.000	
V6	.664**	.646*	.733**	.022	.007	1.000

Source: Field Survey Data. 2003.

*P< .05, **P< .01

V1- total competency in planning communication methods

V2- total competency in implementing communication methods

V3- total competency in evaluating communication methods

V4- total training needed in planning communication methods

V5- total training needed in implementing communication methods

V6- total training needed in evaluating communication methods

4.9. RELATIONSHIPS BETWEEN AEAs TOTALCOMPETENCY LEVEL AND THE LEVEL OF TRAINING NEEDED

Objective nine sought to find the relationships between AEAs total competency level and the level of training needed in the use of extension teaching aids in terms of planning, implementing and evaluating.

Table 25 depicts that there was very strong positive and substantial association between AEAs total competency in planning extension teaching aids and total level of training needed in planning extension teaching aids (.664**). Total level of training needed in implementing extension teaching aids and AEAs total competency in planning extension teaching aids, shows a very strong positive and highly significant association (.725**). In addition there was a positive substantial association between AEAs total competency in planning extension teaching aids and evaluating extension-teaching aids (.614*). Potter (1972) in a paper prepared for the New South Wales Department of Agriculture stated that planning of extension activities is linked to evaluation of those activities.

According to Diaz-Bordenave (1974), implementing an activity helps in the addition of agricultural innovations. This intends leads to evaluating what was implemented. Table 25 shows that AEAs need to increase their competency level through training.

There was low positive association between total competency of AEAs in evaluating communication methods and total training needed in planning (.230*), very strong association with total training needed in implementing (.767**) and low association with total training needed in evaluating communication methods (.192*)

4.9. RELATIONSHIPS BETWEEN AEAs TOTALCOMPETENCY LEVEL AND THE LEVEL OF TRAINING NEEDED

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According to Diaz-Bordenave (1974), implementing an activity helps in the addition of agricultural innovations. This intends leads to evaluating what was implemented. Table 25 shows that AEAs need to increase their competency level through training.

There was low positive association between total competency of AEAs in evaluating communication methods and total training needed in planning (.230*), very strong association with total training needed in implementing (.767**) and low association with total training needed in evaluating communication methods (.192*)

Potter (1972) from his studies stated that where an evaluation has been made of a situation before an extension program, it is possible to assess the effects of planning and implementing the programme. The studies reveal that AEAs need to increase their competency level by increasing their training levels.

The alternate hypothesis therefore was accepted because it stated that there is significant association between AEAs total competency level and the level of training needed in the use of Extension teaching aids in terms of planning, implementing and evaluation.

Table 25 Pearson correlation matrix between AEAs total competency level and the level of training needed in extension teaching aids.

	V1	V2	V3	V4	V5	V6
V1	1.000					
V2	.725**	1.000				
V3	.164	.169	1.000			
V4	.664**	.767**	.230*	1.000		
V5	.725**	.665**	.767**	.169**	1.000	
V6	.614**	.107*	.192*	.760**	.107	1.000

Source: Field Survey Data. 2003.

*P< .05, **P< .01

V1- total competency in planning extension-teaching aids

V2- total competency in implementing extension-teaching aids

V3- total competency in evaluating extension-teaching aids

V4- total training needed in planning extension-teaching aids

V5- total training needed in implementing extension-teaching aids

V6- total training needed in evaluating extension-teaching aids

4.10. DIFFERENCES BETWEEN AEAs IN THE FOUR DISTRICTS IN TERMS OF AEAs DEMOGRAPHIC CHARACTERISTICS.

Objective ten sought to find the differences between the four (4) districts on their demographic characteristics.

4.10.1. SEX DISTRIBUTION OF AEAs IN THE VARIOUS DISTRICTS.

There were more males than females (1:3) in all the districts except AMA (1:1). This result confirms findings of Swanson, (1990) which the ratio of female to male agents in agriculture is low in Africa and Asia, varying from 1:11 to 1:14. The low number of female extensionist is seen as a tremendous problem in the Region. Saito and Widmann (1990), stated that in most countries in Africa cultural norms circumscribes male-female interaction.

4.10.2. AGE DISTRIBUTION OF AEAs IN THE VARIOUS DISTRICTS

The mean age of the respondents in Dangme West (39.6 years) was slightly lower than their counterparts in the other districts as shown in Table 26. In Ga, AMA and Tema districts, the mean ages were 40.3, 41.7 and 41.8 respectively. The results indicate that most of the AEAs in Dangme West were younger than those in the other three districts. The SD of 8.21 is an indication of vast variations in individual AEAs age, considering the mean ages in all the districts. Table 26 reveals that the majority of the AEAs are below 43 years. This implies that there are more young AEAs in the Greater Accra Region.

4.10.3. YEARS AT POSITION OF AEAs IN THE VARIOUS DISTRICTS

AEAs in Tema district had spent on the average much more time working at their present position than their counterparts in the other districts as shown in Table 26. The mean years an AEA had spent at present position in the Tema district was 14.7 years with a standard deviation of 7.39 indicating a vast variation in individual agents years at position. In the other districts their standard deviations of 4.21, 4.31, 5.18 (Ga, AMA, Dangbe West respectively) indicates variations in individuals years at position. This may be attributed to further studies in the university and individual pursues or promoted to a higher position.

4.10.4. EDUCATIONAL LEVELS OF AEAs IN THE VARIOUS DISTRICTS

A greater proportion of the AEAs in the various districts had agricultural college certificate. The Ghana statistical service (1993) estimated that only 11% of rural households live in communities that have a secondary or technical school. This could, perhaps, explain why the bulk of AEAs had agricultural college certificate as their highest level of education. Adhikorya (1989) found out that extension organizations do not function to full expectation in many developing countries because of their very low level of education, mostly on the point of its front line staff (AEAs). The low level of educational level of AEAs in the various districts call for more frequent and relevant in-service training for the AEAs.

4.10.5. YEARS OF EXPERIENCE IN COMMUNICATION SKILLS

As indicated from Table 26, AEAs in AMA had the highest number of years experience in communication skills as shown from the mean of 12.3, with Tema district having the least mean value of 10.00. The standard deviations of 6.58, 6.54

and 6.68 (Ga, AMA, Tema and Dangbe West respectively) is an indication of vast variations in individual AEA's years of experience in communication skills. This could perhaps be linked to the fact that some had experience in communication skills out of their present job or within their organisation.

4.10.6. NUMBER OF TRAINING COURSES ATTENDED

With a mean value of 5.78, AEA's in Dangbe West had the highest number of training courses attended as indicated in Table 26. Their standard deviation shows a vast variation in individual AEA's number of training courses attended. Results depicted from the other districts are that they have attended at least two training courses; Ga – 2.66, AMA – 1.37 and Tema 1.40. These show close response to their mean. Given the general low level of educational qualification of AEA's one will not be wrong to state that in-service training in MOFA is inadequate. Seesang (1983) observed that appropriate in-service training is needed to maximize the effectiveness of AEA's. Various studies have also cited the lack of inadequate in-service training as one reason why both development workers and projects have failed to achieve their potential. (Allo and Schwass, 1982; Seesang, 1983, Coms and Ahmed, 1974).

Table 26. Demographic Distributions of AEAs in the study area

Demographic Characteristics	DISTRICTS							
	GA		AMA		TEMA		DANGME WEST	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
Age	40.29	6.34	41.71	5.90	41.82	6.37	39.60	8.21
Years at position	9.20	4.21	7.93	4.31	14.73	7.39	7.89	5.18
Years of experience in communication methods	11.03	6.58	13.96	6.42	10.00	6.54	11.14	6.68
Training courses attended	2.97	2.66	2.18	1.37	2.35	1.40	5.78	5.58
TOTAL	63.49	19.79	65.78	18.0	68.9	21.7	64.41	25.65

Source: Field Survey Data. 2003.

F-test for significant variance was computed to compare the means to find whether the mean difference was statistically significant. The results from Table 27 revealed that, there were significant differences in sex of AEAs, years at position and training courses attended in the four selected districts. For sex of AEAs, the computed alpha was .001, for years at position of AEAs the computed alpha level was .000 and for training courses attended by AEAs the computed alpha level was also .000 whilst the selected alpha was .05. According to Sarantakos (1993), since the selected alpha (.05) was greater than the computed alpha (.001, .000 and .000) the mean difference for sex of AEAs, years at position of AEAs and number of training courses attended by AEAs in the four districts were significant.

The F-value at the significant level (.001) was 5.103. This implies that the between-group variance is 5.103 times greater than the within-group variance. Also the F-value at the significant level (.000) was 7.641, which implies that the between-group

variance is 7.641 times greater than the within-group variance. Finally the F-value at the significant level (.000) was 6.212 also implies that the between-group variance is 6.212 times greater than the within-group variance.

It could be explained that the significant differences that occurred in sex of AEs in the four districts might be due to the low number of female officers in the districts. However, the significant differences in number of years at position of AEs might also be due to AEs not pursuing further academic qualification in the University. Finally, significant differences that occurred in the number of training courses attended might be due to inadequate training or workshops organised for the AEs in the four districts.

Table 27: ANOVA to compare the mean levels of AEs demographic characteristics

Variables to be compared		Sum of squares	df	Mean square	F	Sig
Sex	Between groups	3.737	4	.934	5.103	.001
	Within groups	21.055	115	.183		
	Totals	24.792	119			
Age	Between groups	166.057	4	41.514	.915	.458
	Within groups	5125.510	113	45.358		
	Totals	5291.568	117			
Years at position	Between groups	836.470	4	209.117	7.641	.000
	Within groups	3092.547	113	27.368		
	Totals	3929.017	117			
Educational level	Between groups	1.473	4	.368	1.747	.144
	Within groups	24.023	114	.211		
	Totals	25.496	118			
Years of Experience in Communication Skills	Between groups	282.753	4	70.688	1.644	.168
	Within groups	4815.367	112	42.994		
	Totals	5098.120	116			
Training courses Attended	Between groups	258.977	4	64.744	6.212	.000
	Within groups	1177.777	113	10.423		
	Totals	1432.754	117			

Source: Survey Data, 2003.

4.11. DIFFERENCES BETWEEN THE FOUR DISTRICTS IN TERMS OF THEIR TOTAL COMPETENCY LEVEL AND THEIR LEVEL OF TRAINING NEEDED

Objective eleven was to find the differences between AEAs total competency levels and their level of training needed in the various districts in terms of planning, implementing and evaluating communication methods and extension teaching aids.

F-test for significant variances was computed to compare the means to find whether the mean differences were statistically significant. The results from Table 28 revealed that, there were significant differences in competency level in teaching aids and level of training needed in teaching aids in terms of planning, implementing and evaluation in the four selected districts. For AEAs competency level in extension teaching aids, the computed alpha level was .000 whilst the selected alpha was .05. According to Sarantakos (1993), since the selected alpha (.05) was greater than the computed alpha (.000) the mean difference for competency levels of AEAs in extension teaching aids variable factors in the four districts were significant. The F-value at the significant level (.000) was 7.302. This implies that the between-group variance is 7.302 times greater than the within-group variance. Similarly, there was a significant difference between the means of training needed in teaching aids variable factors in the four districts. The specific alpha level was .05 and was greater than the computed alpha level that was .020. Again, the F-value, being 3.031 shows that the variance between groups as far as training needed in teaching aids was concerned was 3.031 times greater than the variance within groups.

It could be explained that the significant differences that occurred in competency level in teaching aids and training needed in teaching aids in terms of planning, implementing and evaluation in the four selected districts might be due to the

differences in the availability of extension teaching aids. This might likely result in the differences in their competency levels and their level of training needed in the selected districts. Although the results revealed significant differences in mean levels of AEA's competency level in extension teaching aids and training level needed in extension teaching aids in the four selected districts, it did not indicate the specific affected districts. In order to find out which two districts differed significantly in their competency levels in extension teaching aids and in their level of training needed in extension teaching aids, Scheffe Post Hoc analysis (multiple comparisons) was computed.

Table 28: ANOVA to compare the mean levels of the identified competency levels and training needs of AEA's.

Variables to be compared	Sum of squares	df	Mean square	F	Sig
COMMETHOD. Between groups	11.534	4	2.883	2.175	.076
Within groups	153.755	116	1.325		
Totals	165.289	120			
TRAMETHOD. Between groups	2.772	4	.693	.403	.806
Within groups	199.460	116	1.719		
Totals	202.231	120			
COMTAIDS. Between groups	51.444	4	12.861	7.302	.000
Within groups	202.547	115	1.761		
Totals	253.992	119			
TRAAIDS. Between groups	17.390	4	4.348	3.031	.020
Within groups	163.534	114	1.435		
Totals	180.924	118			

Source: Survey Data, 2003.

COMMETHOD- Competency level in communication methods.

TRAMETH- Training level needed in communication methods.

COMTAIDS- Competency level in teaching aids.

TRAAIDS- Training level needed in teaching aids.

4.11.1. Multiple comparison competency level of AEA's in extension teaching aids in the four selected districts

Table 29 shows the results from Scheffe Post Hoc test which was on competency level in extension teaching aids of AEA's in the four selected districts, it revealed that significant differences existed between Ga and AMA with a mean difference of 1.0000* and also between AMA and Tema with a mean difference of .3500*. Considering the mean differences of competency levels of AEA's in extension teaching aids between Ga district and AMA, it could be said that in terms of AEA's competency levels in extension teaching aids in the Ga district could be better than that of AMA (as shown in Table 28). However, comparing the mean differences of AEA's competency levels in extension teaching aids in AMA and Tema, table 28 revealed that AEA's competency levels in extension teaching aids might be better in Tema than in AMA. (mean difference of -.3500*). Generally the Scheffe Post Hoc test on AEA's competency levels in extension teaching aids indicated that AEA's in AMA needs attention. The results might be due to lack of extension teaching aids at AMA where AEA's do not have access to these teaching aids.

Table 29. Multiple comparisons of the mean levels of competency in extension teaching aids in the four selected districts. (Scheffe Post Hoc Analysis).

Dependent Variable	(I) Political District	(J) Political District	Mean Difference (I-J)	Standard Error	Sig	
Competency level in extension teaching aids. (COMTAIDS)	Ga	AMA	1.0000*	.1252	.041	
		Tema	5.000E-02	.1252	.741	
		Dangbe (W)	.6000	.1252	.313	
	AMA	Ga	-1.0000*	.1252	.041	
		Tema	.3500*	.1252	.028	
		Dangbe (W)	.4000	.1252	.356	
	Tema	Ga	-5.000E-02	.1252	.741	
		AMA	-.3500*	.1252	.028	
		Dangbe (W)	.9500	.1252	.645	
	Dangme	Ga	-.6000	.1252	.313	
		West	AMA	-.4000	.1252	.356
		Tema	-.9500	.1252	.645	

* The mean difference is significant at 0.05 level

Source: field survey data, 2003

Scheffe Post Hoc analysis of Table 30 shows that there were differences in the level of training needed by AEA's between Ga and AMA at a mean difference of .035 in favour of Ga, indicating that AEA's level of training needed in extension teaching aids in Ga district may be higher than that of AEA's at AMA. However, the result shows that, level of training in AMA needed more attention. Generally, the results from Table 30 can be concluded that AEA's in the other districts need some level of training in extension teaching aids despite the fact that they have some level of competency.

Table 30. Multiple comparisons of the mean levels of competency in extension teaching aids in the four selected districts. (Scheffe Post Hoc Analysis).

Dependent Variable	(I) Political District	(J) Political District	Mean Difference (I-J)	Standard Error	Sig	
Training needed in extension teaching aids. (TRAAIDS)	Ga	AMA	.3000*	.3201	.035	
		Tema	-.2500	.3201	.763	
		Dangbe (W)	5.000E-02	.3201	.628	
	AMA	Ga	-.3000*	.3201	.035	
		Tema	-.1500	.3201	.683	
		Dangbe (W)	.1500	.3201	.342	
	Tema	Ga	1.000E-01	.3201	.763	
		AMA	.1500	.3201	.683	
		Dangbe (W)	-.1000E-01	.3201	.297	
	Dangme	Ga	-5.000E-02	.3201	.628	
		West	AMA	-.1500	.3201	.342
			Tema	.1000E-01	.3201	.297

* The mean difference is significant at 0.05 level

Source: field survey data, 2003

4.12. IMPORTANT SUGGESTIONS TO IMPROVE ON AEAs COMPETENCY LEVEL IN THE USE OF COMMUNICATION METHODS AND EXTENSION TEACHING AIDS

Objective 10 was to find out from AEAs some of the important suggestions to improve their competency level in the use of some communication methods and extension teaching aids.

Table 31 shows important suggestions that AEAs listed which they think can help improve on their competency level in the use of communication methods and extension teaching aids. The items are ranked in descending order based on their frequency of occurrence.

Each of the first six suggestions was listed by more than half of the number of AEAs studied (60). These are, more training for staff, motivation, training materials should be supplied, ensuring timely promotion and enough funds to organise demonstrations. (74.4%, 71.1%, 69.4%, 66.9%, 61.2% and 57.0% respectively).

The suggestions listed by less than half of the AEAs include; there should be limited size of operational area, supervisors should visit AEAs regularly, staff should be upgraded and T&T should be increased.

It is worthy of note that most of the statements listed concern the working conditions of the AEAs and will strengthen the level of training needed by AEAs. This indicates that AEAs lack frequent training on the use of communication methods and extension teaching aids that has reduced their abilities to transfer technologies to farmers.

Table 31. Range of items, frequency and corresponding percentages of statements to improve AEAs competency level.

ITEM	RANK	FREQUENCY	PERCENTAGE
There should be more training for staff.	1	90	74.4
AEAs should be motivated	2	86	71.1
Enough training materials should be supplied	3	84	69.4
Ensuring timely promotion	4	81	66.9
There should be enough funds to organise demonstrations	5	74	61.2
More field days should be organise for staff and farmers	6	69	57.0
There should be limited size of operational area	7	55	45.5
Supervisors should visit AEAs regularly	8	53	43.8
Staff should be upgraded	9	23	19.0
T&T should be increased	10	13	10.7
There should be improvement in mobility	11	8	6.6

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1. Summary of Study

The study was carried out to examine AEAs perceived competency levels in some communication methods and extension teaching aids and to correlate such perceptions to their level of training needed. A descriptive-correlational research design was used for the study, which was conducted in four districts in the Greater Accra Region namely Ga, AMA, Tema and Dangme West. In all, one hundred and twenty-one AEAs were involved in the study.

Validated questionnaires were used for data collection. This was preceded by a pilot study. Data analysis was statistically done using statistical analysis employed include, descriptive, and Pearson correlational techniques. Analysis of variance (ANOVA) was also used to test the difference of means between the various districts.

The following summary is done in relation to the objectives and where applicable hypothesis stated for the study.

5.1.1. The Demographic Characteristics of AEAs

(a) Age: The study revealed vast variation in age of respondents ($SD= 6.73$). AEAs age ranged from a minimum of twenty-six (26) years and a maximum of fifty-nine (59) years, with a mean age of forty (40) years. The results shows that sixty-two AEAs are below the mean age of 40.9 whilst fifty-six AEAs are above the mean age. This is an indication of ageing AEAs in the region.

(b) Sex: The study revealed that there were eighty-five males representing 70.2% and thirty-five females representing 28.9% in the study area. AMA district had the highest number of females; nineteen representing 55.9%. The district with the highest number of males was Dangme West (twenty-five, representing 89.2%) considering the number of AEAs in the district.

(c) Years at position: The maximum years AEAs have stayed at their position were thirty years with a minimum of one year. The results show a variation in years at position of respondents. AEAs number of years at position had a mean of approximately ten years. These were thirty-five AEAs between eleven years and fifteen years representing 29.7%. Within the four districts, Ga district had fourteen AEAs (41.2%) between eleven and fifteen years had stayed at their position and Tema district with eight AEAs representing 34.8% between twenty-one and thirty years.

(d) Educational level: The highest certificate AEAs had achieved in the Region was agricultural college. About 68% of AEAs studied possess the General Certificate in Agriculture and about 31% possess a University Certificate. Considering the numerical strength of AEAs in the various districts Tema district showed the highest percentage of AEAs who possess General Certificate in Agriculture (78.3%) and AMA had the least percentage of AEAs with General Certificate in Agriculture (51.5%). With the highest level of education in the various districts, AMA had a percentage value of 48.9, and Tema district having the least number of AEAs with a University certificate (21.7%).

(e) Training courses attended: Forty-one (33.9%) AEAs had attended only two training courses indicating the highest number of training courses AEAs in the region had attended. Ten (8.3%) of the respondents have had no training while one (0.8%) respondent had attended twenty-four training courses.

In the various districts, five AEAs in the Ga district have not attended any training course, with Dangme West district showing the least value of one AEA not attending any training course. These results reveal inadequacy of training courses in MOFA.

(f) Years of experience in communication skills: According to the study the overall mean of years of experience was 11.7 with a maximum of thirty and a minimum of zero years. The results show vast variation in years of experience of respondents (SD=6.62). Thirty-nine AEAs representing 32.2% had between ten and fourteen years of experience. Three AEAs representing 2.5% had thirty years of experience in communication skills with seventeen (14.0%) AEAs having experience in communication skills are between zero and four.

Comparing the various districts, AMA does not have any AEA whose years of experience in communication skills are between zero to four years. One AEA in Ga, AMA and Dangme West responded having thirty years of experience in communication skills. The study revealed that AEAs year of experience in communication skills in the region was good.

5.1.2 AEA's Perceived Competency Level in Communication Methods

The results show that the overall mean in planning communication methods was 3.23, with a standard deviation of 0.93. This means AEA's are good in planning communication methods. AEA's level of implementing communication methods had a mean of 3.17 with a standard deviation of 0.82. This means they (AEA's) are also good in implementing communication methods. The same response was for evaluation of communication methods that gave a mean of 3.09 and a standard deviation of 0.93.

5.1.3. AEA's Perceived level of Training in Communication Methods

The results revealed a mean of 3.66 and a standard deviation of 0.97 for the level of training needed in planning, a mean of 3.59 and a standard deviation of 0.92 for their level of training needed in implementing. For their level of training needed in evaluating communication methods, there was a mean of 3.55 and a standard deviation of 1.02.

The results suggest an approximate mean of four for planning, implementing and evaluating communication methods that indicates that AEA's need much training in communication methods to increase their competency level.

5.1.4. AEA's Perceived Competency Level in Extension Teaching Aids

The mean values for planning, implementing and evaluating of extension teaching aids were 3.02, 2.92 and 2.91 respectively whilst their respective standard deviations were 0.98, 0.93 and 0.99. The results suggest an approximate mean of three indicating that AEA's competency level in planning, implementing and evaluating were good.

5.1.5. AEA's Perceived Level of Training Needed in Extension Teaching Aids

The results show that the overall mean and standard deviation were 3.37 (SD=1.07), 3.32 (SD=1.09) and 3.32 (SD=1.11) for planning, implementing and evaluating respectively. This means that they need some level of training in planning, implementing and evaluating extension teaching aids.

With an approximate mean of four the results suggest that AEA's competency level was very good but they needed some level of training to improve their competency level in the use of extension teaching aids. This could be achieved by making available extension teaching aids at the district levels.

5.1.6. Relationships Between AEA's Socio Demographic Characteristics and their Total Perceived Competency levels

At the 0.05 probability level there was a negative and low association between AEA's years at position and their total competency in evaluating extension-teaching aids (-.23*). The results could be due to the fact that AEA's studied do not have access in using extension teaching aids no matter the number of years they have stayed at their position. It could also mean that the long serving AEA's have had less experience in teaching aids because of the non-availability of such aids.

There was a positive but low association between AEA's training courses attended and total competency in planning communication methods (.19*) as well with the total competency level in implementing communication methods (.19*). The results indicated that the competency level of AEA's increases in planning and implementing communication methods as they attend more training courses.

The null hypothesis was accepted because there was no relationship between AEAs socio demographic characteristics and their total competency in planning communication methods.

5.1.7. Relationship Between AEAs Socio Demographic Characteristics and their Total level of Training Needed

Sex of AEAs and their total training needed in planning extension teaching aids had a positive direction with low association (.19*). There was a negative direction with a low association between AEAs years at position and their total training needed in implementing extension teaching aids (-.19*). This may be due to the fact that AEAs studied were not interested in further training in implementing extension-teaching aids.

The null hypothesis was accepted because there was no relationship between AEAs selected demographic characteristics and their total training level needed in planning communication methods and extension teaching aids.

5.1.8. Relationships Between AEAs Total Competency and the Level of Training Needed in Communication Methods

The results indicated highly significant, positive and strong relationship between their competency level in planning communication methods and implementing them (.774**). There was also a high significant, positive and strong relationship between implementing of communication methods and evaluating the selected communication methods (.784**).

The results further revealed a very strong, positive and high significant relationship between the level of training needed in planning and in both implementing (.789**) and evaluating (.733**) of the selected communication methods. There was a strong relationship, positive and high significant relationship between AEAs perceived level of training needed in implementing and evaluating communication methods (.750).

The results show that as training of AEAs increases their competency level also increases or as training of AEAs decreases their competency level in the use of communication methods also decreases. The alternate hypothesis was therefore accepted because it stated that there is significant relationship between AEAs perceived competency level and the level of training needed in communication methods.

5.1.9. Relationship Between AEAs Total Competency Level and the Level of Training Needed in Extension Teaching Aids

The results under this objective show that there was very strong, positive and high significant relationship between AEAs total competency in planning and implementing extension teaching aids. This means as training in planning extension teaching aids increases AEAs competency level in evaluating them increases.

Positive, strong and high significant relationship also existed between AEAs competency level in planning and implementing extension teaching aids (.725**). It further revealed a substantial relationship between their competency level in planning and evaluating extension teaching aids (.664**). Between their competency level in

planning and the level of training needed in implementing extension-teaching aids, there was a positive, very strong and high significant relationship (.725**).

The results showed a positive, very strong and high significant relationship between the total competency in planning and total competency in evaluating extension teaching aids (.767**) as well as the competency level in planning and the level of training needed in implementing extension teaching aids (1.000**). There were few low significant relationships between their total competency level and their level of training needed was positively correlated.

The picture is not different from objective seven, because as training of AEAs increases their competencies also increases in the use of extension teaching aids. The alternate hypothesis which states that there is significant relationship between and among AEAs total perceived competency level and the level of training needed in extension teaching aids was accepted.

5.1.10. Suggestions to Improve Upon AEAs Competency Level in the Use of Communication Methods And Extension Teaching Aids

The important suggestions that AEAs listed which they think can help improve on their competency level in the use of communication methods and extension teaching aids were ranked in descending order based on their frequency of occurrence.

Each of the first six suggestions was listed by more than half of the number of AEAs studied (60). These are, more training for staff, motivation, training materials should

be supplied, ensuring timely promotion and enough funds to organise demonstrations. (74.4%, 71.1%, 69.4%, 66.9%, 61.2% and 57.0% respectively).

The suggestions listed by less than half of the AEAs include; there should be limited size of operational area (8.7%), supervisors should visit AEAs regularly (8.3%), staff should be upgraded (3.6%) and T&T should be increased (2.0%).

It was noted that most of the statements listed concern the working conditions of the AEAs and goes to strengthen the level of training needed by them. This indicates that AEAs lack frequent training on the use of communication methods and extension teaching aids that has reduced their abilities to transfer technologies to farmers.

5.2. Conclusions

Based on the findings of this study the following conclusions can be drawn.

The mean age of AEAs studied was 40 years. About 47% of the AEAs were above this mean and 8.5% over 50 years. The results reveal that the AEAs in the four districts were ageing.

The study revealed that 31% of the AEAs studied have stayed in their position for less than six years. It could be possible that probably those who had stayed at the same position for over twenty years are on further studies.

Despite their low educational level, the AEAs studied had rich experience in communication skills. Though the AEAs have vast experience in communication skills ranging from 0-30 years with a mean of 11.7, there was great variations in individual years of experience as indicated by the standard deviation of 6.6.

Eight percent of the AEAs had never attended any training course, with 33.9% attending two training courses. This reveals that inadequate training course abounds in the four districts.

The study indicated that the AEAs' perceived competency level in planning, implementing and evaluating was good as indicated by the mean values of 3.23, 3.17 and 3.09 respectively. The study further revealed that the AEAs perceived that they needed much training by the corresponding mean values of 3.66, 3.59 and 3.55.

AEAs studied perceived that their competency levels in planning, implementing and evaluating the use of extension teaching aids was good (3.02, 2.92 and 2.91) they further perceived that they need some level of training in planning extension teaching aids (3.37), some level of training in implementing extension teaching aids (3.32) and some level of training in evaluating extension teaching aids (3.32)

AEAs' total competency levels were found to have highly significant relationship with their level of training needed in communication methods in terms of planning, implementing and evaluating. (From .789** to .733**).

AEAs' perceived competency level and the level of training needed in extension teaching aids were also found to have high significant association with their competency level in terms of planning, implementing and evaluating (from 0.664** to 1.000**). It was observed that AEAs in AMA needed more training in extension teaching aids. This might be due to the inadequate extension teaching aids in the AMA office. The findings revealed that AEAs in the Greater Accra region needed training in the use of extension teaching aids that will eventually lead to increase their competency levels.

5.3. Recommendations

On the basis of the findings of this study, the following recommendations are made:

1. The competency of the agents should be frequently assessed so that the discrepancy between what he/she possesses and what he/she should possess can be easily corrected. This will enable training to be tailored to agents' specific needs.
2. Regular in-service training be organised for extension agents in the various districts. Although training programmes may differ from district to district. In the Dangme West and Tema districts, more emphasis should be placed on competency areas such as planning, implementing and evaluating communication methods and extension teaching aids
3. The curricula of agricultural colleges are reviewed periodically to reflect the changing needs of extension agents. This will enable graduates from the colleges to perform acceptably in their chosen occupation.
4. Adequate formal training opportunities should be made available to extension agents to upgrade their skills in the use of communication methods and extension teaching aids.
5. Further research should be carried out to cover the whole country. In this respect, attention should be paid to the various units of the districts so that the findings will serve as a basis for drawing up a comprehensive programme for training extension agents.
6. To improve upon the sex ratio, more females should be recruited to join the extension services in the Greater Accra Region.

7. The aging AEAs in the region need replacement. This can be achieved by recruiting more young agricultural graduates from the Universities and Agricultural Colleges to join the Extension Services.
8. For effectiveness of the extension services, there is the urgent need to improve upon AEAs low level of Education. This can be achieved by encouraging more AEAs to take advantage of the Diploma training and the Bsc. Degree for mid-carrier extension staff currently going on at Kwadaso Agricultural College and the University of Cape Coast respectively.

REFERENCES

- Adams, M. E (1988). Agricultural Extension In Development Countries.
Longman Publishers Ltd: P. 9-15.
- Adhikorya, R. A. (1989). 'Communication training needs of agricultural and extension education graduates: A survey of AAEE members.
Journal of Agricultural Extension, Vol. 34, no.3. pp.84-92.
- Agnew, D.M. & Gilbertson, O. S. (1986). Adult Education in Agriculture.
A handbook for Nebraska vocational agriculture teachers.
Lincoln University: Department of Nebraska Agriculture.
- Allo, E. M. & Sehwas, I. M. (1982), Communication of Innovations: A cross Cultural Approach, Free Press, New York.
- Al- Zaidi, (1979). Perception of professional agricultural extension agents in the Eastern Province of Saudi Arabia to recommendation for training for future employees. Unpublished Master's report Stillwater: Oklahoma State University.
- Alpheous, S. & Vildne, D. (1996). Opinion regarding solutions to problems in Agricultural Extension held by Extension workers in Swaziland.

- Antholth, C.H. (1994), Getting ready for the 20th Century: Technical change and Uninternational modernization in Agriculture. World Bank Technical paper, 217 Washington D.C.
- Arlen, E. (1994). Leadership for Non Formal Education.
Journal of International Agriculture and Extension Education Vol. 1
No. 116.
- Arokoyo, T. (1998). Agriculture Technology Development and Desermination. A Case Study of the Ghana and Nigeria Experience. CTA,
Wageningen.
- Ayewoh, M. E. (1983). The Professional Competencies Needed by Agricultural Extension agents In Bendel State of Nigeria. Unpublished Doctoral Dissertation. University Park: the Pennsylvania State University.
- Bahal, R., Swanson, B. E. and Farmer, B. J. (1992): Human Resource in Agriculture Extension: A Worldwide Analysis. Indian Journal of Extension Education, 28 (3,4).
- Baker, A. & Trusse, S. T. (1981). Adiministrative Model for the Incorporation of Performance- Education Professional Development Programme (Research Series No 5) Auburan AL: Auburn University Centre for Vocational and Adult Education.

Blackburn, D. J. and Flaherty, J. (1994): Transitions and Directions in Extension. In
D. J. Blackburn (Ed), Extension Handbook Processes and
Practices, pp 8-17, Toronto: Thompson Education Publishing.

Bandura, A. (1982). Self-efficacy mechanism in human agency.
American Psychologist. 37 (2) 122 – 147.

Bansal, M. P. (1991). Human Resource Development in Public Enterprise.
RBSA Publishers, India: SMS Highway. P11.

Bartholomew, H.M. (1994). The World Largest Extension System.
Journal of International Agriculture and Extension Education Vol. 1.
pp 22-27.

Benor, D. & Harrison, J. Q. (1997). Agricultural Extension : The Training and Visit
System. Washington D.C: The World Bank.

Benor, D; Harrison. J. Q. & Baxter, M. (1984). Agricultural Extension: The Training
and Visit System. Washington: The World Bank Publication.

Biddle, B.J & Thomas E.J. (Eds) (1966). Role Theory: Concepts and Research
New York.

Bradfield, A. (1966). Guide to Extension Training
Rome: Food and Agriculture Organisation.

Brunner, J. (1977). The process of Education. Cambridge,

MA: Harvard University Press.

Budford J. A. & Bedian, A.G. (1988). Management in Extension.

Alabama: Auburn University Cooperative Extension service.

Budford, J.A., Jr. Bedeian, A.G. & Linder, J.R. (1995). Management in Extension

(3rd Ed.) Columbus, Ohio State University Extension.

Chizari, M. (1991). Agricultural teachers perceptions of Adult education programs:

An examination of critical educational needs, obstacles faced, and

Support needed. Journal of Agricultural Education, Vol. 32. No.2.

Cohen, L. & Manion, I. (1990). Correlational Research. Research Methods in

Education (3rd ed.). London: Mcmillian Press.

Comms D. J. and Ahmed N. E. (1974).-' Making agricultural extension effective:

lessons of recent experience' London Mcmillian Press.

Csoka, L. S. & Bons, P.M. (1978). Manipulating the situation to fit the leaders style

Validation studies of leader match,

Journal of Applied Psychology, 1978, 63:295-300.

DAES, (1997) Draft report on orientation workshop held in Winneba. Unpublished

Report.

Dale, E. (1969). Audiovisual Methods in Teaching. 3rd ed. Holt, New York

Deci, E. L. (1980). The Psychology of self determination, Lexington MA: Lexington.

Diaz-Bordenave, J. (1974). Communication and adoption of agricultural innovations

in Latin America: in communication strategies for Rural

Development. Proceedings of cornell- CIAT International

Symposium, cli, Colombia. Cornel University, Ithaca.

Doll, W.E.Jr. (1977). Developing Competency. In Edmund C. Shord Competency

Washington : University Press of America Inc.

Easter, C.W. (1985). Assessment of professional competencies needed by extension

Agent in developing countries: Case study in Swaziland

Unpublished Doctoral Dissertation, University Park:

The Pennsylvania state University.

FAO, (1990). Participation in Practice In Rural Development.

No. 12, Rome: FAO.

Findlay, H. J. (1992). Where do secondary vocational agricultural teachers acquire

Professional agricultural education competencies?

Journal of Agricultural Education, Vol. 33, No.2. 28-33.

974) Visual Findlay, H. J. & Drake, J. B. (1989). Influence of selected experiences on perceived

Levels of competency of secondary vocational agriculture Teachers. Journal of Agricultural Education, Vol. 30, No.3, 46-53.

Fiedler, E.F, & Chemers, M. M. (1984). Improving leadership effectiveness: The Leader match concept (2nd ed). Canada: John Wiley & Sons Inc.

Fraenkel, F. J. and Wallen, N. E. (1990). How to Design and Evaluate Research in Education. McGraw-Hill publishing Co., New York.

Freire, P. (1973). Education for Critical Consciousness. New York: Continuum Publishing Company.

Ghana Statistical Service (1993) Population Census in Ghana. Ghana Publishing Corporation, Accra.

Ghana Vision 2020 (1995): The 1st Step: Presidential Report on Co-ordinated programme of Economic and Social Development Policies, Accra, Ghana.

Gonzalez, I. M. (1982). The professional competencies needed by extension agent in the Pennsylvania Cooperative Extension Service. Unpublished Doctoral Dissertation. University Park: The Pennsylvania State University.

Hartmut, A., Herbert, B., and Georg D., (1989) ' Rural Development Series'

Agricultural extension, BMZ. D-5300 Bonn.

Hawkins, H. S. (1 Communication of Science and Technology.

Moorhouse. Pitmore, Melbourne.

Heath, D.H. (1977). What is the Enduring Effects of Higher Education tell us

About a Liberal Education.

Journal of Higher Education. 1976, (47), 173-190.

Hertling, J.E. (1974). Competency-based education: Is it applicable to adult

Education programme. Adult Education, 23, 50-52.

Herzberg. E. (1974). Competency-based education: Is it applicable to adult

Education programme. Adult Education, 23, 50-52.

Herzberg, J. E; Mausner, F.G; Peterson. R.O. & Capwell, D.F. (1957). Job

Attitudes. Review of Research and Opinion, Pittibrough: Psychological
Service of Pittsburgh.

Hondale, G. (1982). Supervising agricultural extension: practices and procedures for

Improving yield level of performance. Journal of Agricultural
Administration, 29-45.

Hunter, J. E. & Hunter, R.F. (1984). The validity and utility of alternative predictors

Of job performance. Psychological Bulletin, 96, 72-99.

Hunter, J.E. (1980). Validity Generalization for 12,000 jobs: An application of Synthetic validity and validity generalization to the General.
Washington, DC: US Service, Dept. of Labour.

Klemp, G. O. (1977). "Three Factors of Success in the Work: Implication for Curriculum in Higher Education". Association of Higher Education, Chicago, March 1977.

Knox, A.B. (1980). Proficiency theory of adult learning.
Contemporary Education Psychology, 5, 378-404.

Knox, A. B. (1977). Adult development and learning.
A Handbook of Industrial Growth and Competency in the adult Years. San Francisco: Jossey - Bass, 1977.

Kulkani, M. N. (1985). Management of Human Development
Programme – Challenges and Opportunities. Indian Management 24
(12).

Lawler, E.E. (1973). Motivation in Work Organisation Monterey California:
Brooks/ Cole Publishing Co.

Leagans, J. P. & Loomis, C.P. (1977). Behavioural Change in Agriculture:

Concepts and strategies for Influencing Transition.

Ithaca, New York: Cornell University Press.

Lee, J. S. (1981). Keeping adult/young farmer education in perspective

Agricultural Education Magazine 53 (12) p.3.

Leonard, D. K. (1985). Researching the peasant Farmer. Chicago: University of

Chicago Press, p. 129.

Leonard, D. K. (1973).Organizational Structures for Productivity in Kenya

Agricultural Extension. in Rural Administration in Kenya.

Nairobi: East African Literature Bureau.

Loveland, E.H. (1976). Alternatives and Innovations, paper presented at the

National Conference on Evaluation Competency in the Health

Professions. Sponsored by the Professional Examinations

Service. Rome: FAO. November, 1976.

Loevinger, J. (1980). Ego development. San Francisco: Jossey-Bass,

Maunder, A.H. (1972). Agricultural Extension: A Reference Manual

(ERIC) Document Reproduction Service No. ED 075 628.

Leagans, J. P. & Loomis, C.P. (1977). Behavioural Change in Agriculture: Concepts and strategies for Influencing Transition.
Ithaca, New York: Cornell University Press.

Lee, J. S. (1981). Keeping adult/young farmer education in perspective
Agricultural Education Magazine 53 (12) p.3.

Leonard, D. K. (1985). Researching the peasant Farmer. Chicago: University of
Chicago Press, p. 129.

Leonard, D. K. (1973).Organizational Structures for Productivity in Kenya
Agricultural Extension, in Rural Administration in Kenya.
Nairobi: East African Literature Bureau.

Loveland, E.H. (1976). Alternatives and Innovations, paper presented at the
National Conference on Evaluation Competency in the Health
Professions. Sponsored by the Professional Examinations
Service. Rome: FAO. November, 1976.

Loevinger, J. (1980). Ego development. San Francisco: Jossey-Bass,

Maunder, A.H. (1972). Agricultural Extension: A Reference Manual
(ERIC) Document Reproduction Service No. ED 075 628.

McClelland, D.C. (1973). Testing for competency rather than for intelligence.

American Psychologist, 28, 1-14.

McEnrue, M.P. (1988). Length of experience and the performance of managers in the

establishment phase of the careers. Academy of Management

Journal 31, 175 – 185.

McKeachie, W.J. (1980). New Directions for teaching and learning, Cognition and

College teaching. San Francisco: Jossey Bass No. 2.

MOFA, (1997) Draft report on orientation workshop held in Winneba. Unpublished

Report.

Nagel, U. J. (1997) Alternative Approach to Organising Extension. In E. Swanson

R.P. Bentz, and A.J.(eds) Sofranko, Improving Agricultural Extension:

A Reference Manual, Rome, FAO. pp 13-20.

Najjingo-Kasujia, M. & McCaslin, N.L. (1991). An assessment of the technical and

Professional competencies needed by extension personnel in

The Central Region of Uganda. Mo: Proceedings of the

AIAEE Conference St. Louise, May 1991.

- Ntifo-Siaw, E & Agunda, R. (1994). A Comparative study of Management Effectiveness under the Training and Visit and General Extension Systems in Ghana. Journal of Agricultural Education Vol. 35, No4. pp 36-41.
- Ntifo-Siaw, E. (1993). Managing Agricultural Extension: Perceived Performance of The T&V and General Extension Approaches in Ghana. Unpublished doctoral dissertation, Ohio: State University.
- Oakley, P. and Garforth, C. (1985): Guide to Extension Training. Rome: FAO.
- Ongondo, W.N. (1984). The Professional Competencies needed by agricultural Extension personnel in the Kenya. Agricultural Extension Service. Unpublished Doctoral Dissertation, University Park. The Pennsylvania State University.
- Phipps, L.J. & Osborne, E. W. (1988). Handbook on agricultural education in public Schools. (3rd ed.). Danville IL: The interstate Printers Publishers Inc.
- Potter, J. N. (1972). Evaluation of Agricultural Extension. N.S.W. Department of Agriculture, Sydney Mimeo.
- Randavay, S. & Vaughn, P. R. (1991). Self-perceived professional competencies Needed and possessed by and agricultural extension workers in Western Region of Thailand: A multivariate technique

Approach Mo: Proceedings of the AIAEE Conference.

St. Louis May 1991.

Ready, R. K. (1967). Administrative Job Issues and Dilemma. New York: McGraw
Book Company.

Rogers, E. M. (1971) Communication of Innovations: A cross cultural Approach,
Free Press, New York.

Roling, N. (1990). Extension Science. University Press, Cambridge, Great Britan,

Rollins, T. J. & Yonder, E.P. (1993). Adult learning Preference: A Profile of
Extension Educators. Journal of Agricultural Education 34 (1)
18-25

Roy, P. and Rogers, E. M. (1969). The Impact of Communication on Rural
Development: An investigation in Costa Rica and India.
University of Illinois press, Urbana.

Rubin, R. B. (1985). The validity of the communication competency assessment
Instrument. Human Communication Research 18, 625-636.

Sabihi, M. (1978). Perceived professional educational training needs of extension
Specialists and agents in selected provinces of Iran.
Unpublished Doctoral Dissertation. Columbus: The Ohio
State University.

Salmanzadeh, C. (1988). Consideration on improving agricultural extension
Organisation and work in rural Iran.
Quarterly Journal of International Agricultural, 27, 304.

Sarantakos, S. (1998). Social Research 2nd ed. London: Macmillan Press LTD.

Schmidt, F. L., Hunter, J. E; Quterbridge, A. N. & Goff, S. (1988). Joint Relation
Of experience and ability with job performance: Test of there
Hypothesis, Journal of Applied Psychology. Vol, 12.

Seesang, S. (1983). Organizational and operational training needs of international
agricultural workers. Unpublished doctoral dissertation.

Shaw, M. E. (1976). Group Dynamics: The Psychology of Small Group Behaviour,
New York, McGraw-Hill.

Spitzberg, B.H. (1993). The dark side of (in) competency.

Paper Presented at the Western Speech Communication
Association Conference. Albuguergue: NM

Spitzberg, B.H. and Cupach, R. (1989).Handbook of Interpersonal Competency
Research. New York: Springer-Verlag.

Swanson, B.E. (Ed) (1990). Report of the Global Consultation on Agricultural Extension. Rome: Food and Agriculture Organisation Of the United Nations.

Thomas, B. A. (1976). An analysis of the relationship between selected variables And job performance of Agricultural extension officers in Trinidad. Unpublished Masters' Thesis. Trinidad: University of the West Indies.

Umuhak, C.T. (1980). The training needs of agricultural extension staff in Eastern Nigeria. Agricultural Administration 7, 79-86.

van den Ben, A. W. and H. S. Hawkins, (1996). Agricultural Extension. New York: John Wiley and Sons.

Vijayarajaran, K. and Singh, Y. P. (1997): Managing Human Resources within Extension. Improving Agricultural Extension: A Reference Manual, Rome: FAO. pp 127-134.

Wiemann, J.M. (1977) Explication and test of model of communication competency. Human Communication Research 3, 195-213.

Wilmot, W.W. (1980). Dyadic Communication (2nd Ed.). Reading MA: Addison-Wesley.

Youdeowei, A. and Kwarteng, J. (1995): Development of Training Materials In
Agriculture. Hong Kong: Clorcraft.

Zhang, Z. (1992). Extension Educator: Practical application and experience in China.

Paper presented at International Seminar on Important Trends
In Agricultural Extension, Beijing: PRC.

APPENDIX

PERCEIVED COMPETENCY LEVELS AND TRAINING NEEDS OF AGRICULTURAL EXTENSION AGENTS IN THE USE OF COMMUNICATION METHODS AND EXTENSION TEACHING AIDS IN THE GREATER ACCRA REGION

AGRICULTURAL EXTENSION AGENTS QUESTIONNAIRE

The aim of the study is to find out the perceived competency levels and training needs of Agricultural Extension Agents in Communicating with farmers for technology transfer. The findings will provide specific recommendations and strategies to strengthen the communication process in the transfer of Agricultural technology.

I shall therefore be very grateful if you could respond to this questionnaire in your quickest possible manner. All information you provide will be handled confidentially and all responses bulked together for analysis.

PART ONE

COMPETENCY IN COMMUNICATION METHODS

Use the ratings to indicate your competency level of some types of communication methods you know. Please tick (✓) the one that is appropriate.

- 5 = Excellent
- 4 = Very good
- 3 = Good
- 2 = Fair
- 1 = Poor

Area of Extension Communication Methods		Perceived Competency				
		5	4	3	2	1
1	What is your competency level in planning demonstrations					
2	What is your competency level in planning lecture					
3	What is your competency level in planning discussions					
4	What is your competency level in planning meetings					
5	What is your competency level in planning field trips					
6	What is your competency level in planning agricultural shows					
7	What is your competency level in implementing demonstrations					

8	What is your competency level in implementing lectures					
9	What is your competency level in implementing discussions					
10	What is your competency level in implementing meetings					
11	What is your competency level in implementing field trips					
12	What is your competency level in implementing agricultural shows					
13	What is your competency level in evaluating demonstrations					
14	What is your competency level in evaluating lecture					
15	What is your competency level in evaluating discussions					
16	What is your competency level in evaluating meetings					
17	What is your competency level in evaluating field trips					
18	What is your competency level in evaluating agricultural shows					

LEVELS OF TRAINING NEEDED IN COMMUNICATION METHODS

Use the ratings to indicate your level of training needed in communication

methods. Please tick (√) the one that is appropriate.

- 5 = Very Much
- 4 = Much
- 3 = Some
- 2 = Little
- 1 = Very Little

Area of Extension Communication Methods		Level of Training Needed				
		5	4	3	2	1
19	What is your level of training needed in planning demonstrations					
20	What is your level of training needed in planning lectures					
21	What is your level of training needed in planning discussions					
22	What is your level of training needed in planning meetings					
23	What is your level of training needed in planning field trips					
24	What is your level of training needed in planning agricultural shows					
26	What is your level of training needed in implementing demonstrations					

27	What is your level of training needed in implementing lectures					
28	What is your level of training needed in implementing discussions					
29	What is your level of training needed in implementing meetings					
30	What is your level of training needed in implementing field trips					
31	What is your level of training needed in implementing agricultural shows					
32	What is your level of training needed in evaluating demonstrations					
33	What is your level of training needed in evaluating lectures					
34	What is your level of training needed in discussions					
35	What is your level of training needed in evaluating meetings					
36	What is your level of training needed in evaluating field trips					
37	What is your level of training needed in evaluating agricultural shows					

COMPETENCY IN THE USE OF EXTENSION TEACHING AIDS

Use the ratings to indicate your level of competency associated with the following extension teaching aids. Please tick (✓) the one that is appropriate.

- (5) Excellent
- (4) Very good
- (3) Good
- (2) Fair
- (1) Poor

Areas of Extension teaching aids		Perceived Competency				
		5	4	3	2	1
38	What is your competency level in planning the use of flip charts?					
39	What is your competency level in planning the use of video?					
40	What is your competency level in planning the use of booklets?					
41	What is your competency level in planning the use of overhead projector?					
42	What is your competency level in planning the use of posters?					
43	What is your competency level in planning the use of folders?					
44	What is your competency level in planning the use of pamphlets?					
45	What is your competency level in planning the use of radios?					
46	What is your competency level in planning the use of newspapers?					
47	What is your competency level in implementing the use of flip charts?					
48	What is your competency level in implementing the use of video?					
49	What is your competency level in implementing the use of booklets?					
50	What is your competency level in implementing the use of overhead projector?					
51	What is your competency level in implementing the use of posters?					
52	What is your competency level in implementing the use of folders?					
53	What is your competency level in implementing the use of pamphlets?					
54	What is your competency level in implementing the use of radios?					

55	What is your competency level in implementing the use of newspapers?					
56	What is your competency level in evaluating the use of flip charts?					
57	What is your competency level in evaluating the use of video?					
58	What is your competency level in evaluating the use of booklets?					
59	What is your competency level in evaluating the use of overhead projector?					
60	What is your competency level in evaluating the use of posters?					
61	What is your competency level in evaluating the use of folders?					
62	What is your competency level in evaluating the use of pamphlets?					
63	What is your competency level in evaluating the use of radios?					
64	What is your competency level in evaluating the use of newspapers?					

LEVELS OF TRAINING NEEDED IN THE USE OF EXTENSION

TEACHING AIDS.

Use the ratings to indicate your levels of training needed in the following extension teaching aids. Please tick (✓) the one that is appropriate.

- (5) Very Much
- (4) Much
- (3) Some
- (2) Little
- (1) Very Little

Areas of Extension Teaching aids		Levels of Training needed				
		5	4	3	2	1
65	What is your level of training needed in planning the use of flip charts?					
66	What is your level of training needed in planning the use of video?					
67	What is your level of training needed in planning the use of booklets?					
68	What is your level of training needed in planning the use of overhead projector?					
69	What is your level of training needed in planning the use of posters?					
70	What is your level of training needed in planning the use of folders?					
71	What is your level of training needed in planning the use of pamphlets?					
72	What is your level of training needed in planning the use of radios?					
73	What is your level of training needed in planning the use of newspapers?					
74	What is your level of training needed in implementing the use of flip chart?					
75	What is your level of training needed in implementing the use of video?					
76	What is your level of training needed in implementing the use of booklet?					
77	What is your level of training needed in implementing the use of overhead projector?					
78	What is your level of training needed in implementing the use of posters?					
79	What is your level of training needed in implementing the use of folders?					
80	What is your level of training needed in implementing the use of pamphlets?					
81	What is your level of training needed in					

	implementing the use of radios?					
82	What is your level of training needed in implementing the use of newspapers?					
83	What is your level of training needed in evaluating the use of flip chart ?					
84	What is your level of training needed in evaluating the use of video?					
85	What is your level of training needed in evaluating the use of booklet ?					
86	What is your level of training needed in evaluating the use of overhead projector?					
87	What is your level of training needed in evaluating the use of posters?					
88	What is your level of training needed in evaluating the use of folders ?					
89	What is your level of training needed in evaluating the use of pamphlets ?					
90	What is your level of training needed in evaluating the use of radios ?					
91	What is your level of training needed in evaluating the use of newspapers?					

PART TWO

BACKGROUND INFORMATION:

(1) Please indicate your District

- (1) GA (2) AMA (3) TEMA (4) DANGBE EAST

(2) Please indicate your Sex. (1) MALE (2) FEMALE

(3) What is your job title.....

(4) Age as at last birthday.....

(5) How long have you been in this particular position in your District?.....

- (6) Highest educational level
 (1) AGRIC COLLEGE (2) UNIVERSITY

	implementing the use of radios?				
82	What is your level of training needed in implementing the use of newspapers?				
83	What is your level of training needed in evaluating the use of flip chart ?				
84	What is your level of training needed in evaluating the use of video?				
85	What is your level of training needed in evaluating the use of booklet ?				
86	What is your level of training needed in evaluating the use of overhead projector?				
87	What is your level of training needed in evaluating the use of posters?				
88	What is your level of training needed in evaluating the use of folders ?				
89	What is your level of training needed in evaluating the use of pamphlets ?				
90	What is your level of training needed in evaluating the use of radios ?				
91	What is your level of training needed in evaluating the use of newspapers?				

PART TWO

BACKGROUND INFORMATION:

(1) Please indicate your District

- (1) GA (2) AMA (3) TEMA (4) DANGBE EAST

(2) Please indicate your Sex. (1) MALE (2) FEMALE

(3) What is your job title.....

(4) Age as at last birthday.....

(5) How long have you been in this particular position in your District?.....

(6) Highest educational level

- (1) AGRIC COLLEGE (2) UNIVERSITY