TRAINING NEEDS OF AGRICULTURE TEACHERS IN LANAO DEL SUR AND MARAWI CITY

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In spite of the high literacy it has produced, education in the country has failed to bring about in the Filipino learner the growth or the power to cope with his environment. It has alienated him from his own conditions and needs and from those of his own brothers and country. It has produced Filipinos different in taste, dull with inhibition and unresponsive to the soul of the society—the country around them. (Cruz, 1978). As a consequence, Philippine education has come to be regarded as artificial sophistication. This state and effects of Philippine education have placed the country in a paradoxical situation. While educationally the Philippines is classified among the semi-developed or advanced countries, it is not even included among the 75 countries classified by Harbison and Myers in their book *Education Manpower and Economic Growth* (see Papers and Proceedings of the "Workshop on Manpower and Human Resources," Continuing Education Center, Los Baños, Laguna, Philippines, October 13-15, 1972, Part I, p. 3). The reason is that the country's economic development is not commensurate with its educational growth. Economically, the Philippines is identified with the developing countries.

The high turn-out of college graduates can be explained by the fact that Philippine society has come to regard education primarily as one of the consumer goods rather than of the producer goods, something to display or flaunt about, rather than a tool necessary in the process of earning a living and contributing to the national goal. That these college graduates are unprepared to take effective roles in the economic development of the country is also explained by the fact that while some attempts had been made to improve education in the country, these were far from sufficient to make education more responsive and relevant to the rapid changes that have taken place.

Although the country is known for its vast agricultural lands, a major portion of the areas stay idle or undeveloped. These idle fertile lands once developed can generate economic growth.

To correct the imbalance and to remedy the paradoxical situation, the government authorities, particularly the Ministry of Education and Culture, introduced redirection of the curriculum. To attain its objective, the teaching of elementary agriculture has been implemented in all schools in the country.

However, Santos, et. al. (1966) reported that instruction in agriculture at all educational levels may fail due to scarcities of facilities and qualified teachers. Lack of qualified teachers to handle agriculture is markedly observed in the elementary level. The majority of the elementary agriculture teachers were holders of bachelor's degrees which were not even remotely related to agriculture.

Many times, we forget that the elementary schools play an important role in the upbringing of every citizen in the country. On this aspect, Jameson (1960) has this to say: "The elementary schools, either organized in a straight auditorium or platoon, are the schools for beginners. The beginners are tomorrow's merchants, lawyers, doctors, and chief farmers." These are the schools which will break in the child for an enduring education and efficient livelihood. The best training should be done on this level of instruction.

In consonance to the claim that schools of beginners be strengthened, the statement of Beck (1975) is hereby quoted :

> "In a very physical sense, the baby's early environment and the amount of sensory stimulus he receives can actually cause physical changes in his brain and foster the growth of his mental capacity. During his first years, the child will change from an organism that can do little more than cry, suck, sneeze, sleep and develop into a thinking, reasoning, creative, imaginative, remembering individual . . . thus, this is the best time to stimulate them for correct intellectual growth.

The works of Jameson (1960) and Beck (1975) suggested that efforts of the government and every citizen to develop the country should start on the first level of education – the elementary level.

With regards to the effectiveness of teachers in translating technology, Deeze (1967) has this to say, "Most human behaviour is learned. The teachers though coming from one learning institution may learn different behaviour, and thus transmit to pupils different experiences. To narrow the individual differences, training must be continuous."

If the teachers in the Philippines are charged with the development of a well-guided citizens, these teachers must be given worthwhile training in the subjects they are teaching. This particular step is very much needed when the teachers lack enough qualifications in the subjects they are teaching.

Santos, et al. (1966) said that there was a high percentage (23%) of elementary agriculture teachers who lack the necessary qualifications. This situation suggests that the present qualifications of teachers teaching elementary agriculture will not yield an entrepreneurial education. Entrepreneurial education as defined by Atty. Luis Ladonga (1979) is that education by which skills of family members and unemployed groups will be developed to enable them to set up small income enterprises or activities.

The main hope is for gainful self-employment, not economic dependency on others in terms of sales or salaries and employment. Entrepreneurial motivation through education, credit support and technical assistance could help lift these darkening economic clouds from the national horizon.

There are many roles that the school can play to effect economic stability, but this stability can only be obtained if the teachers in the schools are technically trained and very well prepared in the subjects they are to teach to the pupils.

For teachers teaching elementary agriculture, this requirement of proper preparations is a must, because the teaching of agriculture requires accuracy and experimentations. Any teacher

who falls short of these requirements cannot by any means translate the necessary technology to the pupils.

Considering the facts presented above, the researcher is encouraged to undertake a research work which would shed light into the training needs of teachers in agriculture and the status of teaching elementary agriculture. The finding out of the real training needs of these teachers involved in the teaching of elementary agriculture would lead to the development of a training curriculum vital to entrepreneurial motivation of the pupils as well as of the community people.

Conceptual Framework

Article V, Section 1 of the 1971 Constitution of the Republic of the Philippines provides among others that, "It shall be the duty of the citizen to contribute to the Republic's development and welfare." This Constitutional provision is directed to all Filipino citizens regardless of professions and vocations and walks of life.

As a recognition of the tremendous role of education in nation-building, it was promulgated that "the State shall establish and maintain a complete, adequate, and integrated system of education relevant to the goals of national development."

Adequacies of education require that all fields of sciences be well taught in the schools. Further, curricular offerings must be responsive to the needs and demands of the clientele. Adequacy means that field of sciences to be taught in schools are relevant and contributory to the national development.

Moreover, one field of science identified to help the development of the country is agriculture. To this end, the Philippine government through the Ministry of Education and Culture developed many schemes centered upon the development of individual citizens from childhood to old age. One of the giant steps towards the movement for better education for Filipinos was Executive

Order No. 202, creating the Presidential Commission to Survey Philippine Education, dated December 24, 1964. Again, this Executive Order No. 202 was signed by President Marcos in order to meet the demands, needs and improvement of the educational system, to make it responsive to the challenge of modernization, and to attain the goals of national development.

Another step was the issuance of Presidential Decree No. 6-A, otherwise known as Educational Development Decree of 1972. This decree was issued to implement the policies, objectives and programs contained in the report of Presidential Survey Commission and the creation of the Educational Development Projects Implementing Task Force (EDPITAF).

Since it is clear that agriculture is one thrust of the government for national development, one project of the EDPITAF was towards the development of agriculture. This project of EDPITAF was the development of Experimental Agricultural High Schools to serve as centers for research and developmental efforts in secondary agriculture.

On the other hand, the country is blessed with fertile agricultural lands. But these lands are left in the hands of the unskilled, because many of the farmers in the country are dropouts from the elementary schools. Dropouts from the high schools seek jobs other than farming. Even students from experimental agricultural schools do not return to farming.

This condition requires that Philippine agriculture must be taught earlier in schools. If farmers are dropouts from the elementary schools, then agriculture must be taught in this level of education.

However, as evidenced in the study of Santos (1966), our elementary agriculture teachers lack the necessary preparation in agricultural subjects, thereby rendering them a hindrance to the national objectives of education that "educational institutions shall aim to inculcate . . . scientific, technological, and vocational efficiency into the mind of the citizens."

If the foregoing conditions will prevail in our educational sys-

tem, then agriculture as a way to economic development will instead be the recipient of lavish ventures in the country. Agriculture as a thrust for the development of the country's natural resources will instead be its silent barrier.

To promote agriculture, the teaching must start if possible at a lower level of the educational ladder. With this step, this level of education must have relevant curricular offerings in agriculture, qualified teachers, good instructional materials, and appropriate methods, techniques and approaches to enable it to make the attitudes of the people favorable towards agricultural activity.

The problem of getting qualified teachers to teach agriculture or other field of sciences is an international issue. During the 1981 Agricultural Colleges Association of the Philippines (ACAP) Convention, Director Jonathan de la Cruz of the Bureau of Employment Services, Ministry of Labor (MOL) pointed out that over the next five to ten years, there will be increasing demand for agricultural manpower from many countries in the Middle East and Africa. Although the Philippines has been pointed out as a source of this manpower, it is at present short of this manpower for our own development. Director de la Cruz in his speech suggested many solutions to the shortage of agricultural manpower. One of these solutions was to increase the manpower pool through massive short-cut trainings in order to meet the urgent need (ACAP, 1981).

For the felt shortage of agricultural manpower either in teaching or manual work, the best suggestion would be short-cut trainings of our existing personnel. It is short-cut in the sense that it should involve shorter length of time without, however, prejudicing the content and coverage of the training programs. This short-cut training should not be the only means of improving our inadequacies of knowledge in agriculture. The teachers may also go for degree programs to upgrade their competencies in teaching agriculture.

Training is an educative activity. Its suitability and acceptability of the results are a question of long-term scale. In fact, to be strict about its suitability and acceptability of education is

almost unquantifiable in nature. However, a portion of the study of Amer (1978) is hereby quoted to take notice of an existing measure of the suitability of an educative process:

> The suitability of education may be judged on the degree of socialization of the students to make them good members of society and citizen of the country. Suitability of education may be viewed in relation to the professions. The production of persons effective in professions is one cherished value of education. Education may be judged in relation to the production of experts in the technologies and other fields of knowledge in the sciences. . . . The success and failure of the student after graduation is the chief evidence of the validity and efficiency of its training programs.

In the study of Oliva (1969) related to organizing a training program, it was pointed out that a worthwhile training program must be formulated by involving the people who are to be trained. If the teachers teaching elementary agriculture are to be trained to make them competent in agricultural subjects, they must be made to identify the subject areas, methods of training to be employed based on their present status to be worth the time, money and efforts of the government.

This is in consonance to the fact that teachers, by virtue of their appointments and designations, are charged to make all possible innovations in teaching with the available resources in the vicinity. With this injunction in view, the teachers in the province of Lanao del Sur and Marawi City are the rightful sources of reliable information and guidance of any person developing a system of education to provide the training needs of these teachers in agriculture.

The study utilized the normative-descriptive type to be able to ascertain an existing phenomenon. A set of questionnaire was formulated to gather information relating to the professional profile of the teachers involved, the in-service training needed, the

subject matter areas relevant for teaching in the localities being studied, and the status of the teaching of elementary agriculture.

The study is considered very necessary in order that a program towards community development through education and agriculture be attained. This can be seen clearly in the diagram (Figure 1) that follows.

In the diagram, two possible inter-locking factors in the teaching of subjects in the elementary schools can be evolved. The two factors are the general objectives of aims of education as identified based on the community's needs and the performance of the teachers using their own innovative nature and ability to identify their own needs to be able to attain the goal of teaching. Figure 1 shows the conceptual framework of the present study.

The dotted line in the diagram shows the benefits and consideration given by planners to the pupils in making the curricular offerings for teachers' training program.

Figure 2 shows the schematic flow of technology transfer in developing a community. This diagram further shows the pivotal role of the teachers in community development.

It is important to note from the figure that community development is dependent on the teacher, subject offerings, attitude of the teacher towards agriculture, methodology of teaching and the instructional materials available in the process of technology transfer.

The nucleus teacher components are expected to play the vital role of leadership. They are assumed to take the pivotal role to make the teaching of agriculture in the elementary level effective. These teachers are expected to come up with new ideas and concepts so as to meet the needed type of education of the time.

The needed type of education of the time can be based on the present status and conditions in the area where the educative process has to occur. The teacher confronted with various pro-

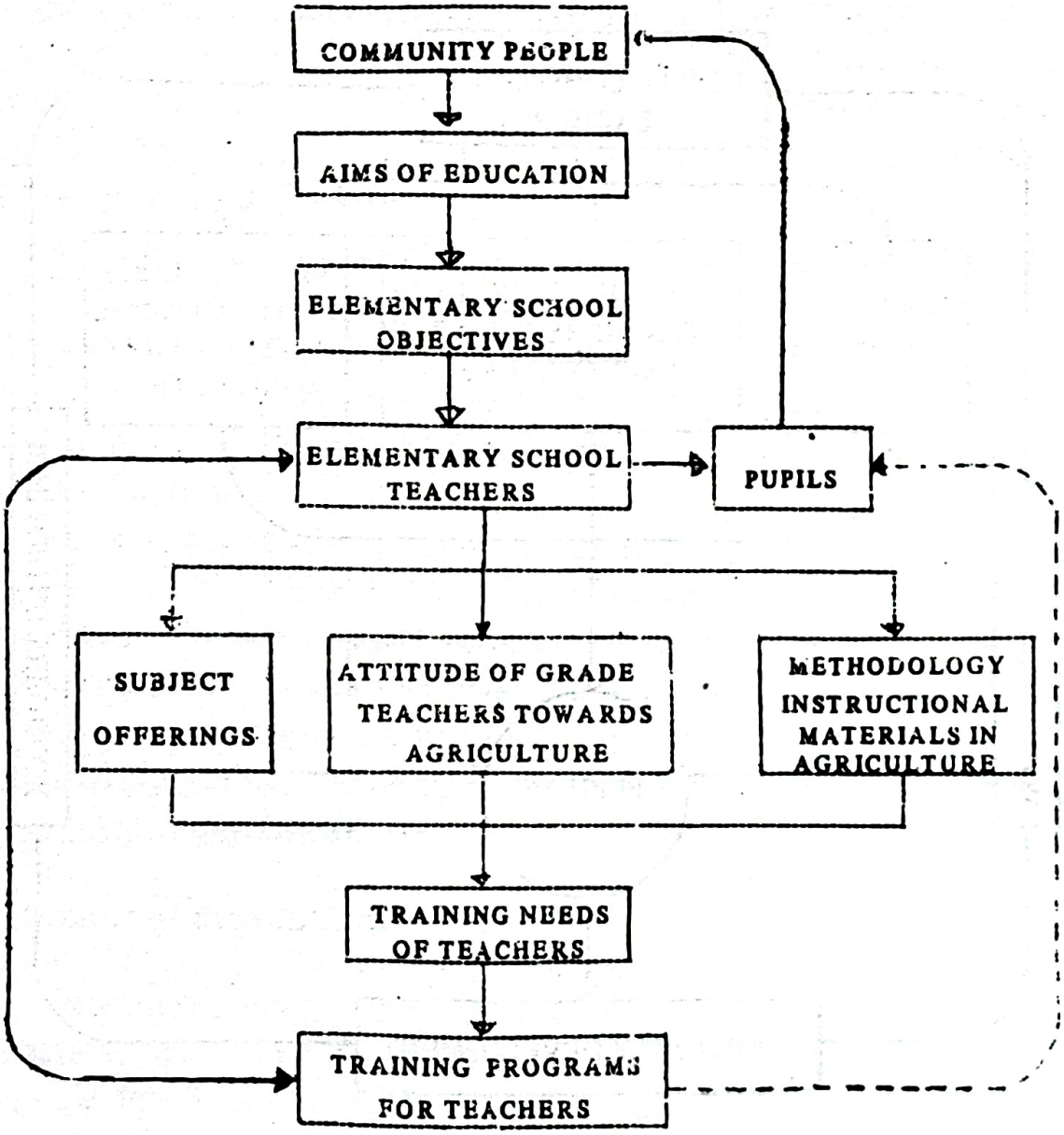

Figure 1

Schematic Presentation of the Conceptual Framework of the Study

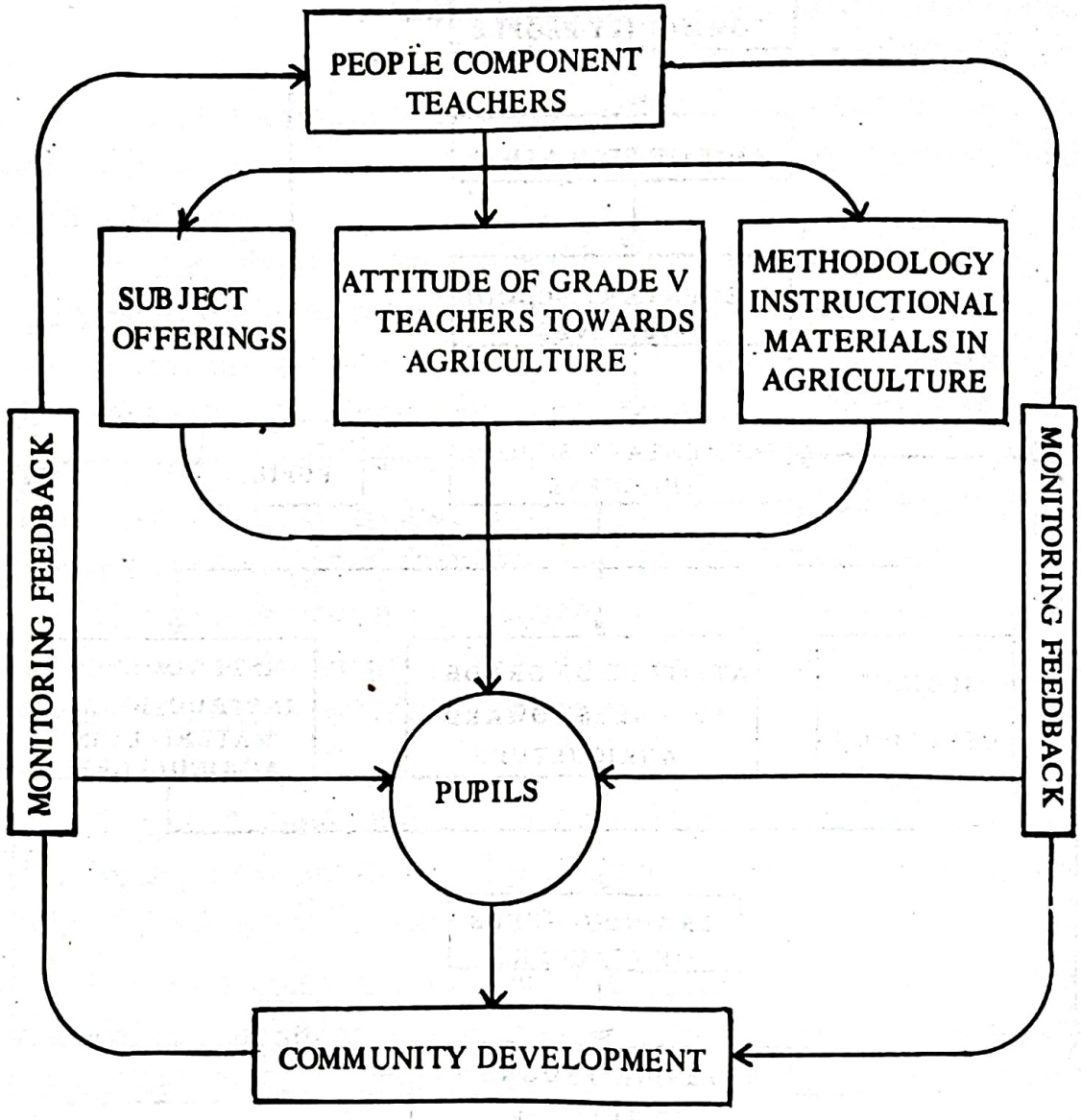

Figure 2

The Role of the Teacher in Community Development

blems while doing the teaching will be a ble to identify and point out his training needs.

The people-teachers-components—given relevant subject offerings, enough instructional materials, with good attitude towards the subject matter, equipped with appropriate methods of teaching, desirable teaching techniques, and worthwhile approaches—will redound to the benefit of the pupils.

From the community's point of view, the pupils are the evidence of development. The pupils who are the young components of the community occupy the nucleus of future citizens of the society. The development of the communtiy is dependent on the development of the young component and the resources available for exploration.

It is thought that pupils, being the potential component of the community, when turned out professionally or vocationally proficient, will make up a developed community. A group of well-developed communities will make up a developed region. A group of well-developed regions will make up a well-developed country and a well-developed country is the very goal of every administrator, educator and researcher.

Statement of the Problem

In general, the study sought to determine the training needs in agriculture based on its present status as perceived by the Grade V teachers in the Province of Lanao del Sur and the City of Marawi.

Specifically, it sought answers to the following inquiries :

1. What is the professional profile of the respondents?

2. What in-service training in agriculture do Grade V teachers teaching agriculture need?

3. What are the subjects in agriculture which the Grade V teachers perceive to be relevant to teach in the Province of Lanao del Sur and the City of Marawi?

4. What is the attitude of the Grade V teachers teaching ele-

mentary agriculture toward agriculture?

5. What is the status of teaching elementary agriculture in terms of:

5.1 Methods, techniques and approaches?

5.2 Instructional materials?

This study is based upon the following assumptions.

1. That knowledge in agriculture can help attain the basic objectives of education on vocational efficiency as embodied in the Philippine New Constitution;

2. That most of the Grade V Teacher teaching elementary agriculture lack adequate knowledge in agriculture but recognize its importance; and

3. That Grade V teachers need in-service trainings in agriculture in order to teach elementary agriculture effectively.

Importance of the Study

Finding out the needed field in agriculture from among these teachers would be more effective than just giving them prearranged training curriculum. What are contained in the curriculum may not be the actual needs of these teachers. This is so, because, as teachers, they have knowledge about the subject matter. Thus, identifying and knowing beforehand the specific training needs of these teachers would be more appropriate in order that time, money and effort will be saved. Specialized training is considered more intensive than generalized training because of its nature. We cannot operate a program of training on a trial-and-error basis, hence, the necessity of prior identification of the training needs of Grade V teacher in agriculture. Transfer of knowledge by generalization is an extension of transfer by identical elements. Unless the new situation had enough in common with the previous one for the learner to perceive applications, no trans-

fer will occur. It is felt that the results of this study may provide guidance for those who are responsible in formulating and conducting training programs for teachers who will be models in teaching elementary agriculture in Philippine schools. In addition, education institutions that may establish training centers might get from this study, guidelines in planning the subject matter and techniques appropriate to teach agriculture.

Related Studies

Chi-Wen Chang (1976) found out that "no matter what the government may want to do to work for agricultural development, one of the most important consideration is the training of personnel." No project can be fully successful without trained, experienced and devoted personnel to handle it.

The New Social Order as envisioned cannot be attained unless most citizens will be agriculture-oriented individuals. This objective had been expressed in Presidential Decree No. 6-A issued by the President of the Philippines.

To be meaningful, the training programs designed for in-service training should be planned to meet the needs of workers to be trained. In-service training is given to bridge the gap in the academic preparation of the worker, to serve as a refresher training, and to meet changing problems and situation as they affect the work that must be done. (Flores, 1954). However, in-service training could either be a refresher course for those who already have a good background, or a new direction for those who are only starting to earn a background in agriculture.

Another work on the subject is that of Leagan (1958) which deals with the inventory of worker's training needs in extension work. Extension workers are teaching arms of the Ministry of Agriculture. Leagan suggests that the following competencies for extension workers are to be developed: 1) knowledge and understanding of technical subject matters; 2) understanding

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extension work and its educational role; 3) skills in human relations; 4) ability to plan; 5) ability to clarify objectives; 6) ability to organize; 7) communication skills; 8) skills in relating principle to practice; 9) skill at inquiry, and 10) ability to evaluate.

On the other hand, the National Task Force on In-Service Training for Teachers (Report of Workshop on Extension Supervision, 1946) in the United States has the following recommendations regarding goals of in-service training; 1) program planning and development; 2) effective thinking; 3) communication; 4) technical knowledge of subject matter; 5) human development; 6) research and evaluation; 7) educational process; 8) understanding social system; and 9) extension organization and administration.

In terms of training methods and procedures, there is a variety of in-service training situations through which in-service training may be accomplished or provided : 1) in-service training, short training, and short courses; 2) workshops; 3) conferences; 4) clinics; 5) field trips; 6) committee to study specific problems; 7) exchange of work responsibilities among workers 8) participation in conducting studies; 9) leadership training and meeting; 10) professional associations; and 11) summer school training (Rogers and Olmstead, 1969).

Throughout the world, training in many forms is becoming popular. Production and prosperity could well be increased by raising the level of training of the work force.

Training programs have always been directed towards improving the level of competence of the individuals involved in the transfer of technology. Many universities had developed institutes, training centers, graduate schools and other training programs.

The work of Hanny (1960) is in some aspect related to the present study since it deals with in-service training needs of county home agents. These home agents are out-of-school teachers in agriculture. The training method identified very useful to them and the manner in which they prefer to receive them include semi-

nar, workshop, short course training.

On subject matters, Hanny (1960) found the following as frequently checked by the respondents : 1) administrative functions; 2) objectives and policies; 3) educational methods such as development and use of visual aids. On subject areas, the respondents frequently checked food and clothing.

Sherer (1961) found out that his respondents signified that they need training very badly while on the job. It was pointed out further that they need training in the following :a) getting people motivated; b) getting participants to maintain accurate records; c) planning future adjustments in farm business on the basis of records; d) news story writing; e) pointers on financing; business; f) creating favorable attitude of farm people about adopting recommended practices; g) teaching goals and values to farm people; and h) records necessary for tax purposes.

Manique (1969) found out that the majority of the barrio people have difficulty reading and understanding instructional materials distributed to them. It goes to show that, the teacher student method would still be more efficient to conduct training rather than the popsheets method. We have overlooked this difference in the Philippine agricultural campaign for self-sufficiency.

Lazo (1971) recommended the following factors to be considered in planning in-service training programs: 1) who will be trained ? ; 2) how will the trainees be selected ? 3) what will be the subject matter content of the training ?; 4) what methods and techniques will be followed ? and 5) how will the training be evaluated ?

To gain some insights on the cost of education in the Philippines, the study of Santos (1966) was read. His study during the school year 1965-1966 revealed that the cost of training in the eight Bureau of Vocational Education high schools with collegiate programs was about ₱ 454.40 per student per year. Of this amount, ₱ 327.87 or 72.15 percent was spent for salaries and wages, ₱47.19 or 10.38 percent for equipment and supplies, and ₱67.72 or 14.19 percent for sundries.

The non-Bureau of Vocational Education schools reported spending about ₱ 987.41 per student broken down as follows: ₱ 681.56 or 69.06 percent for salaries and wages, ₱ 168.56 or 17.07 percent for operation and maintenance, ₱ 127.70 or 12.93 percent for equipment and ₱ 9.59 or 0.97 percent for sundries.

This was considered relevant to the present studies because it involved the training cost of student per year. It is therefore accepted from this fact, that the national government is spending a lot of money for education. This expenditure must in turn result in well-trained citizens of the country. However, the present study is significantly different from all of the other literature cited, because, aside from being confined to teachers teaching elementary agriculture, the area studied is populated with Muslim Filipinos. In this regard, any attempt to develop a training program, should take into consideration the characteristic Islamic dimension of Muslim education.

Research Design and Methodology

The study utilized the normative-descriptive type of research as it was aimed to ascertain certain existing phenomenon. The questionnaire was used to gather the data necessary for this study. The researcher with the assistance of his students who were native to the place of study, administered the questionnaire to the Grade V teachers during their division meetings; in some instances, in their respective classrooms. To give the respondents enough time to fill out the questionnaire, they were allowed to take it home but were given instruction to return the same within two weeks to the Superintendent or to the researcher. Returned questionnaires were immediately edited by the researcher. Those found not properly accomplished were returned to the respondents and immediately picked up again by the researcher.

Permission to involve the Grade V teachers as respondents and to administer the questionnaire in the above stated manner

was secured from the Superintendents and District Supervisors in the two Divisions of Lanao del Sur and in the Marawi City before the formal distribution of the questionnaires.

The Subjects.

The Grade V teachers from the two Divisions of Lanao del Sur and Marawi City constituted the source of information for this study. The selection of the Grade V teachers in the Province of Lanao del Sur and the City of Marawi as the source of information for this study was influenced by the following major considerations, namely: (1) the Grade V teachers were identified by their respective superintendents as teachers of agriculture; (2) the proximity of the area studied to Mindanao State University; (3) the time and finances available to the researcher; (4) Lanao del Sur and Marawi City are the home places of one of the major groups of Muslim Filipinos called the Maranaos.

Owing to certain difficulties in reaching all the 336 Grade V teachers in the Province of Lanao del Sur and the City of Marawi, only 250 or 74.40 percent were included as respondents. In insuring that the divisions mentioned were properly represented, the researcher got the assistance of the Office of the Superintendents and saw to it that all elementary schools were represented in the study. (Please see Table 1 for the distributions of respondents below.)

Table 1

DISTRIBUTION OF RESPONDENTS AS TO THE DIVISION OF SCHOOLS THEY ARE ASSIGNED

DIVISION	N
Lanao del Sur, Division I	100
Lanao del Sur, Division II	90
Marawi City Division	60
TOTAL	250

The Instrument

The questionnaire used to gather the data for this study consisted of five parts, namely: (1) Professional profile of the respondents; (II Subjects in agriculture to be taught in the public elementary schools; (III) Attitudes of Grade V teachers towards agriculture; (IV) Methods, techniques and approaches used by the Grade V teachers; and (V) Instructional materials used by these teachers.

All questions or items included in the questionnaire were of the close-ended type and were answerable by encircling the number used in the scale. The questionnaire was devised this way to facilitate the task of accomplishing it and to induce the respondents to answer every question or item contained in it.

The questionnaire was evolved from unpublished masteral theses, journals, handouts and from bulletins and memoranda on agriculture. Direct inquiries or interviews with some people who are knowledgeable in agriculture were conducted in order to determine the actual training needs in agriculture. The draft of the questionnaire was submitted to the Thesis Adviser for further comments and suggestions. After revision, the questionnaire was pre-tested on twenty-five teachers from Marawi Central Elementary Pilot School. The results of the pre-test were evaluated. Areas found vague were improved and those found irrelevant were discarded. After the revisions, the questionnaire was readministered.

Statistical Treatment

For a valid and reliable interpretation, the following statistical treatment and methods were used:

Percentage. The percentage was used in showing the relationship between magnitudes particularly in indicating how items are to be rated following the verbal interpretations.

Weighted Means. Since the responses to the questionnaire were qualitative, the weighted means were used to establish quan-

titative analysis. The formula is as follows:

$$WM = \frac{WD \times f}{ND}$$

Where:

WM = weighted arithmetic means

WD = weight given for each of the degrees used in the instrument

f = frequency

ND = total number of degrees rated in the continuum

Professional Profile

The need to upgrade educational qualification is vital in order to produce effective teachers, particularly in the field of agriculture. It is not enough that a teacher attends in-service trainings but he should go far even to the extent of conducting his ow field research.

Educational attainment. The result of the survey as shown in Table 2 shows that only 60 or 24 percent of the 250 respondents are graduates of Bachelor of Science in Agriculture (BSA). The rest of the respondents are graduates of BSEED, composed of 70 to 28 percent which is higher than those who graduated from BSA. Another 60 or 24 percent claimed that they are holders of ETC/BSEED degrees. Merely 20 or 8 percent are graduates of BS in Community Development. Forty or 16 percent are graduates of Bachelor of Science in Home Economics (BSHE). None of the 250 respondents has an M.A. degree in Education.

Based on the results enumerated above, barely 24 percent of the 250 respondents have an M.A. degree in Education.

Based on the results enumerated above, barely 24 percent of the 250 respondents have the proper training in agriculture. Although it may be said that one can gain knowledge and skills through teaching a subject for a certain length of time, making short-cut training available to a teacher is definitely useful.

Table 2

EDUCATIONAL ATTAINMENT OF TEACHER RESPONDENTS

DEGREE ATTAINED	N	%
BSA	60	24
BSEED	70	28
ETC/BSEED	60	24
BS in Community Development	20	8
BSHE	40	16
M.A. in Education	–	–
TOTAL	250	100

Length of service. An investigaton on the number of years of teaching experience of the respondents was included. The findings showed that 41 or 16.40 percent of the respondents fall within the bracket of 1-3 years. Forty-two or 16.80 percent fall within the 4-6 years bracket. Sixty-seven or 26.80 percent of the respondents fall within the 7-10 years bracket. Forty-eight or 19.20 percent fall within the 11-13 years bracket. Thirty-five or 13.20 percent fall within 14-16 years and 19 or 7.60 percent fall within 17 years and above.

The results indicated that around one-third of the respondents fall within 7-10 years of teaching experience, a good manifestation that these teachers have the necessary experience to become effective teachers.

Since the survey was on the length of service and not necessarily on the teaching experience of the teachers in teaching agriculture, the researcher interviewed the respondents as to the number

of years they have been teaching elementary agriculture. The interview revealed that all those who fall within the bracket of 1-3 years indicate they have spent also the same number of years teaching elementary agriculture. It is interesting to note that those 19 respondents who had been in the service for 17 years had been teaching agriculture for only 6 years. They claimed that they had taught other subjects before teaching elementary agriculture. See Table 3.

Table 3

LENGTH OF SERVICE OF THE RESPONDENTS

YEARS	N	%
1 - 3 years	41	16.40
4 - 6 years	42	16.80
7 - 10 years	67	26.80
11 - 13 years	48	19.20
14 - 16 years	35	13.20
17 years and above	19	7.60
TOTAL	250	100.00

One way of acquiring knowledge and skills is through research work. In order to determine whether the respondents have conducted research work in agriculture, this aspect was included in the survey. However, the results showed that only 15 or 6 percent of the respondents have conducted research work in agriculture. The rest of the group did not undertake such activity.

In-service training in agriculture. The respondents further were requested to indicate the in-service trainings in agriculture that they had undergone. The results showed that 140 or 56 percent of the group under study claimed that they had attended seminars in agriculture. One hundred and thirty or 52 percent of them have attended special trainings in agriculture. Eighty-one or 32.40 percent have attended graduate programs in agriculture and

61 or 24.40 percent have attended schools "on the air."

From the results, although only few had the pre-service training in agriculture, a good number of the respondents have supplemented their little knowledge through in-service trainings. See Table 4.

Table 4

IN-SERVICE TRAINING IN AGRICULTURE UNDERGONE BY RESPONDENTS

IN-SERVICE TRAINING	N	%
Seminar in agriculture	140	56
Workshop in agriculture	130	
Special training in agriculture	41	
Graduate program in agriculture	81	
Schools in the air	61	
	453	

Subjects in Agriculture to be Taught in Public Elementary Schools

Subject in elementary agriculture must be relevant to the community's resources and potentials. In order to have an insight of the subjects that are taught in public elementary schools, these factors were included in the investigation.

A close perusal of the results showed that 180 of the group under study indicated that Vegetable Production was "very relevant." Forty claimed it in the "relevant" category. Thirty of the respondents claimed it in the "slightly relevant" category. The computed weighted mean value was 4.60 or an equivalent descriptive rating of "very relevant."

This means that the group in general perceived that the vegetable production subject is very relevant in teaching elementary

agriculture.

With regard to "Rice Production," 210 of the respondents felt that this subject was "very relevant." Thirty-nine of the group indicated it in the "relevant" category. Only 11 claimed it to be in the "slightly relevant" category. The computed weighted mean value for this item yielded 4.95 or "very relevant."

The data showed that the rice production subject has to be taught in public elementary schools, considering that it is very relevant to the community's resources and potential. This was mentioned by most respondents. They claimed that there are large tracts of land suitable to rice production. The lands are very fertile and these areas still remain idle. If emphasis on rice production could be given due attention, this move will increase production of rice in the community.

With regards to the "Corn Production" project, only 140 of the group indicated it to be in the "very relevant" category. Forty indicated it in the "relevant" category. Another 40 indicated it to be "slightly relevant," and thirty of the group on the other hand, reported it in the "irrelevant" category. The computed weighted mean value for this item yielded 3.92 with an equivalent descriptive rating of "relevant."

The findings could be interpreted that between rice production and corn production, the former is more favored by the respondents. This may be due to the fact that the people in the areas are "rice eating."

As to the "Farm Management" subject, 121 of the group under study indicated it in the "very relevant" category. Eighty respondents responded it in the "relevant" category. Forty-five (45) of the group indicated "slightly relevant." Four claimed it to be "irrelevant." The computed weighted mean value was 4.27 or "relevant."

With regards to "Agricultural Marketing," particularly on the Food Terminal subject, 70 of the group indicated that this was "very relevant." Seventy-five claimed it was only "relevant," 100 reported that it was "slightly relevant," and the remaining five of the total 250 respondents claimed that the subject was "irrele-

vant." The computed weighted mean value for this item was 3.84 with an equivalent descriptive rating of "relevant." On item 5.2, "cooperatives," 101 of the group under investigation reported that this subject was "very relevant." Seventy-five reported it in the "relevant" category. Fifty-nine claimed that it was "slightly relevant" to them, and 15 reported it in the "irrelevant" category. The computed weighted mean value was 4.04 or an aquivalent descriptive rating of "relevant."

With item 6, "root crop production," 111 of the respondents claimed that this subject was "very relevant" to them. Eighty-two reported that it was only "relevant," 42 claimed that it was "slightly relevant," and the remaining 15 of the 250 respondents reported it as "irrelevant" to them. The computed weighted mean value was 4.10 with an equivalent descriptive rating of "relevant."

With item 7, "poultry production," 141 of the respondents claimed that this subject was "very relevant" to them. Seventy-nine claimed it in the "relevant" category. Twenty-five reported that it was "slightly relevant," and the remaining five of the total 250 respondents reported that this subject was "irrelevant" to them. The computed weighted mean value was 4.42 or "relevant."

With item 8, "duck raising," 78 of the respondents claimed that the subject was "very relevant." Eighty reported it in the "relevant" category. Seventy claimed it was "slightly relevant," and 22 in the "irrelevant" category. The computed weighted mean value for this item yielded 3.85 or a descriptive rating of "relevant."

With item 9, "goat production," 141 of the group under investigation claimed that this subject was "very relevant" to them. Ninety reported it in the "relevant" category, and the remaining 28 of the total 250 respondents reported that the subject was "slightly relevant" to them: The computed weighted mean value for this item was 4.05 or "relevant."

With item 10, "cattle raising," 141 of the respondents claimed that the subject was "very relevant" to them. Eight-six reported the subject in the "relevant" category. Twenty claimed

The computed weighted mean value for this item yielded 4.10 with an equivalent descriptive rating of "relevant."

The results clearly manifested that when it comes to "animal parasite," this subject was perceived by the group to be more relevant than "avian disease," considering that "animal parasite" has a greater weighted mean value.

With item 13, "fruit trees production," 73 of the group under study claimed that this subject was "very relevant" to them. One hundred five, on the other hand, reported this subject as "relevant." Sixty-nine claimed that it was "slightly relevant," and the remaining three of the total 250 respondents claimed that the subject was "irrelevant." The computed weighted mean value yielded 3.99 or a descriptive rating of "relevant."

With item 14, "animal breeding," 63 of the group under investigation reported the subject to be in the "very relevant" category. Forty-four reported that the subject was "slightly relevant" to them and the remaining nine reported that the subject was "irrelevant." The computed weighted mean value was 4.10 or "relevant."

With item 15, "plant breeding," 63 of the respondents reported that the subject was "very relevant" to them. One hundred two claimed it in the "relevant" category. Forty-eight claimed it to be "slightly relevant," and the other 37 respondents reported the subject to be in the "irrelegant" category. The computed weighted mean value for this item yielded 3.76 or a descriptive rating of "relevant."

With item 16, "farm mechanization," particularly on item 16.1, "farm power machinery," 60 of the group under study reported that this subject was "very relevant." Eighty-nine claimed that it was "relevant," 76 reported it to be "slightly relevant" and the other 20 reported in the "irrelevant" category. The computed weighted mean value for this item was 3.55 or "relevant."

With item 16.2, "irrigation and drainage," 101 reported that the subject was "very relevant." Ninety-three claimed it in the "relevant" category. Forty-six reported that it was "slightly rele-

that it was "slightly relevant" and the remaining three respondents claimed that the subject was "irrelevant" to them. The computed weighted mean value was 4.46 with an equivalent descriptive rating of "relevant."

With item 11, "pasture management," 141 of the group claimed that this subject was "very relevant" to them. Eighty-six claimed it in the "relevant" category. Twenty reported that the subject was "slightly relevant," and the remaining three of the total 250 respondents claimed that the subject was "irrelevant." The computed weighted mean value was 4.46 with an equivalent descriptive rating of "relevant."

The results of the investigation clearly manifested that pasture management must be taught to utilize the vast tract of pasture land which has been left idle for a long time.

On disease and pest control, particularly on item 12.1, "livestock diseases," 101 of the respondents claimed that the subject was "very relevant" to them. Eighty-nine reported it in the "relevant" category. Forty-two claimed it in the "slightly relevant" category, and the remaining eighteen of the total 250 respondents reported it in the "irrelevant" category. The computed weighted mean value for this item yielded 4.09 or "relevant."

With item 12.2, "avian diseases (bird)," 63 of the group under study reported the item in the "very relevant" category. Ninety reported it in the "relevant" category. Seventy-two claimed that the subject was "slightly relevant." Twenty-five of the group under study claimed it in the "irrelevant" category. The computed weighted mean value was 3.76 or "relevant."

From the results of the investigation, it could be inferred that in terms of relevancy, the subject on avian diseases was not felt by the group under study to be very relevant.

With item 12.3, "animal parasites," 96 of the group under study claimed it to be "very relevant" to them. Eighty-nine claimed it in the "relevant" category. Sixty of the respondents answered in the "slightly relevant" category. Five of the remaining 250 respondents reported the subject as "irrelevant" to them.

vant" and the remaining 10 of the total 250 respondents reported the subject in the "irrelevant" category. The computed weighted mean value was 4.14 or "relevant."

With item 16.3, "crop," ninety-eighty of the respondents reported the subjects as "very relevant," 95 claimed that it was "relevant" and thirty-eight claimed it to be in the "slightly relevant" category. The remaining 19 of the respondents reported the subject to be in the "irrelegant" category. The computed weighted mean value registered 4.08 or a descriptive rating of "relevant."

With item 16.4, "animal," 79 respondents indicated it in the "very relevant" category. One hundred one reported it to be "relevant" and 43 claimed that it was only slightly relevant." Twenty-seven reported the subject to be in the "irrelevant" category. The computed weighted mean value for this item yielded 3.92 or an equivalent descriptive rating of "relevant."

With item 16.5, "feedmill and milling," 79 of the group under investigation reported the subject in the "very relevant" category. Ninety-six claimed that the subject was "relevant." Sixty-three revealed that it was "slightly relevant," and the remaining 12 of the total 250 respondents claimed the subject to be in the "irrelevant" category. The computed weighted mean value for this item was 3.96 or "relevant." The general computed weighted mean value was 4.10 with an equivalent descriptive rating of "relevant."

Based on the results of the investigation, it could be inferred that the lowest weighted mean value was on item 16.1 which is on farm power machinery. The reason behind this may be due to the fact that this subject is not yet ready to be taught to the populace inasmuch as they have been used to utilizing work animals. The highest weighted mean value of 4.95 was on rice production. The reason behind is that there are vast tracts of agricultural lands which remain idle. See Table 5.

Attitudes of Professionals Towards Agriculture

Table 6 shows the attitudes of professionals toward agriculture.

A close perusal of the results showed that with item 1, "every individual should have knowledge in agriculture," 68 of the respondents reported themselves to be in the "strongly agree" category. One hundred twenty choose "agree." Fifty were "uncertain" and 12 indicated "disagree." The computed weighted mean value yielded 3.496 or a descriptive rating of "agree."

With item 2, "teaching of agriculture should start in the elementary level," 160 of the group under study claimed that they "strongly agree." Eighty-five checked "agree," and the remaining five of the total 250 respondents were "uncertain." No responses were registered in the "disagree" and "strongly disagree" categories. The computed weighted mean value for this item was 4.70 or "strongly agree."

With item 3, "knowledge in agriculture will enhance food production," 140 of the group under investigation favored the "strongly agree" category. One hundred ten claimed that they "agree." No responses were noted in the "uncertain," "disagree," and the "strongly disagree," categories. The computed weighted mean value for this item was 4.56 or a descriptive rating of "strongly agree."

With item 4, "subject offerings in elementary agriculture must be in accordance with the agricultural resources." 114 of the respondents reported that they "strongly agree." One hundred five reported that hey "agree" on this aspect. Twenty-one were "uncertain," and the remaining 10 of the total 250 respondents were on the "disagree" category. The computed weighted mean value yielded 4.29 o "agree."

With item 5, "those teaching agriculture should have a continuous inservice training to make them effective," 130 of the group under investigation reported that they "strongly agree." One hundred five claimed that they "agree." Fifteen were uncertain." No responses were noted in the "disagree," and the "strong-

Table 5

SUBJECTS IN AGRICULTURE TO BE TAUGHT IN PUBLIC ELEMENTARY SCHOOLS

	SUBJECTS	5	4	3	2	1	TOTAL	WM	DR
1.	Vegetable production	180	40	30	–	–	-250	4.68	Very Relevant
2.	Rice production	210	39	11	–	–	-250	4.95	Very Relevant
3.	Corn production	140	40	40	30	–	-250	3.92	Relevant
4.	Farm management	121	80	45	4	–	-250	4.27	Relevant
5.	Agricultural marketing								
	5.1 food terminal	70	75	100	5	–	250	3.84	Relevant
	5.2 cooperatives	101	75	59	15	–	250	4.04	Relevant
6.	Root crop production	111	82	42	15	–	250	4.10	Relevant
7.	Poultry production	141	79	25	5	–	250	4.42	Relevant
8.	Duck raising	78	80	70	22	–	250	3.85	Relevant
9.	Goat production	132	90	28	–	–	250	4.05	Relevant
10.	Cattle raising	141	86	20	3	–	250	4.46	Relevant
11.	Pasture management	141	86	20	3	–	250	4.46	Relevant
12.	Disease and Pest Control								
	12.1 livestock diseases	101	89	42	18	–	250	4.09	Relevant
	12.2 animal parasites	63	90	72	25	–	250	3.76	Relevant
	12.3 animal parasites	96	89	60	5	–	250	4.10	Relevant
13.	Fruit trees production	73	105	69	3	–	250	3.99	Relevant
14.	Animal breeding	89	108	44	9	–	250	4.10	Relevant
15.	Plant breeding	63	102	48	37	–	250	3.76	Relevant
16.	Farm mechanization								
	16.1 farm power machinery	60	89	76	25	–	250	3.55	Relevant
	16.2 irrigation and drainage	101	93	46	10	–	250	4.14	Relevant
	16.3 crop	98	95	38	19	–	250	4.08	Relevant
	16.4 animal	79	101	43	27	–	250	3.92	Relevant
	16.5 feedmill and milling	79	96	63	12	–	250	3.96	Relevant

WEIGHTED AVERAGE – 4.10 RELEVANT

LEGEND:

5 - Very Relevant 4 - Relevant

3 - Slightly Relevant 2 - Irrelevant 1 - Very Irrelevant

WM - Weighted Mean DR - Descriptive Rating

Table 6

ATTITUDES OF TEACHER–RESPONDENTS TOWARDS AGRICULTURE

N = 250

	ATTITUDES	5	4	3	2	1	TOTAL	WM	DR
1.	Every individual should have knowledge in agriculture	68	120	50	12	–	250	3.97	Agree
2.	Teaching of agriculture should start in the elementary level	160	85	5	–	–	250	4.70	Strongly Agree
3.	Knowledge in agriculture will enhance food production	140	110	–	–	–	250	4.56	Strongly Agree
4.	Subject offerings in elementary agriculture must be in accordance with the agriculture resources	114	105	21	10	–	250	4.29	Agree
5.	Those teaching agriculture should have a continuous in-service training to make them effective	130	105	15	–	–	250	4.42	Agree
							WEIGHTED AVERAGE –	4.38	Agree

LEGEND:

5 - Strongly Agree
4 - Agree
3 - Uncertain
1 - Strongly Disagree
2 - Disagree
WM - Weighted Mean
DR - Descriptive Rating

ly disagree" categories. The computed weighted mean value was 4.42 or "agree." The general computed weighted mean average was 4.38 with an equivalent descriptive rating of "agree."

From the results of the investigation, it could be inferred that the most favored attitude was given to item 2 which was "teaching of agriculture should start in the elementary level." This has the highest score of 4.70 or "strongly agree." The lowest perception rating went to item 1, "every individual should have knowledge in agriculture." This earned a weighted mean value of 3.97 or a descriptive rating of "agree."

Methods, Techniques and Approaches Used by the Teachers

Methods Used by the Teachers. Educational institutions are under a large measure of social control, whether they are public or private; hence they are open to "improved methods" of teaching if it can be demonstrated that these methods are an outcome of scientific research. Because of this, it might be assumed that psychologist interested in the study of learning would be very eager to have his theories embodied in the arts of instruction, and validated by the greater efficiency and effectiveness of teaching techniques that result from his findings.

While many students of learning are indeed interested in instruction, this is not universally true. The uneven interest in applications come about in part through division of labor and specialization of knowledge: there are "pure science" aspects to the study of learning, just as in other field of inquiry, and the scientist delving into basic problems may not be concerned with applying what he knows. Thus one does not expect every geneticist to be interested in the breeding of farm animals, even though what he learns may ultimately be useful to the animal breeder (Hilgard and Bower, 1966).

Therefore, a geneticist may not be a good teacher in animal breeding because his interest is in plants. Besides, the geneticist may not have the correct method, techniques and approaches in teaching.

Table 7

METHODS USED BY THE TEACHERS

METHODS USED	5	4	3	2	1	TOTAL	WM	DR
Field Trip	98	102	50	–	–	250	4.19	Relevant
Demonstration	63	98	53	36	–	250	3.75	Relevant
Lecture	89	93	46	22	–	250	3.99	Relevant
Experiment	89	92	47	22	–	250	3.99	Relevant
Observation	90	91	47	22	–	250	3.99	Relevant
Traditional	93	90	43	34	–	250	4.08	Relevant
Educational Trip	98	102	45	5	–	250	4.17	Relevant
			WEIGHTED AVERAGE				3.89	Relevant

These conditions make teaching quite a taxing job. It is not enough that one has the educational qualifications and the skills to teach, but one has to utilize the method or methods that will suit the needs and demands of the situation. This aspect was included in the investigation. The methods of teaching included are field trip, demonstration, lecture, experiment, observation, traditional (chalk and eraser), and educational trip.

Methods, techniques and approaches are included in the investigation because the teaching of agriculture cannot be carried out with one method alone. Teaching of agriculture will be both theoretical and practical. The practical aspect will be in articulation with the theories learned in the classroom.

A close perusal of the results ofthe investigation showed that in the methods used by the teachers particularly in "field trip," 98 of the group under study reported this method as "very relevant." One hundred two claimed it as "relevant," and the remaining 50 of the total 250 respondents reported it as "slightly relevant." The computed weighted mean value for this item yielded 4.19 or a descriptive rating of "relevant." (Please see Table 7).

With item 2, "demonstration," 63 of the respondents reported that this method was "very relevant." Ninety-eight claimed that this was "relevant," 53 reported that this method was "slightly relevant" and 26 revealed that it was "irrelevant." The computed weighted mean value yielded 3.75 or "relevant."

With item 3, "lecture," 89 of the group under study reportec this method as "very relevant." Ninety-three claimed that it wa "relevant." Forty-six claimed it as "slightly relevant," and th remaining 22 of the total 250 respondents reported the method a "irrelevant." The computed weighted mean value for this iten was 3.99 with an equivalent descriptive rating of "relevant."

With item 4, "experiment," 89 of the respondents reporte this aspect in the "very relevant" category. Ninety-two claime that it was "relevant." Forty-seven reported that this method w "slightly relevant" and 22 claimed it in the "irrelevant" categor The computed weighted mean value for this item yielded 3.99

a descriptive rating of "relevant."

With item 5, "observation," 90 of the group under study reported this method as "very relevant." Ninety-one claimed it was "relevant." Forty-seven reported it in the "slightly relevant" category, and 22 claimed that it was "irrelevant." The computed weighted mean value yielded 3.99 or "relevant."

With item 6, "traditional (chalk and eraser)," 93 of the respondents claimed the method as "very relevant." Ninety reported it in the "relevant" category. Forty-three claimed it was "slightly relevant" and the remaining 24 reported it in the "irrelevant" category. The computed weighted mean value was 4.08 or a descriptive rating of "relevant."

With item 7, "educational trip," 98 of the group under investigation reported this method as "very relevant." One hundred two claimed it was "relevant." Forty-five claimed it as "slightly relevant." The remaining five reported this method as "irrelevant." The computed weighted mean value yielded 4.17 or an equivalent descriptive rating of "relevant."

From the results of the investigation, it could be inferred that although generally the teachers accepted and utilized field and educational trips, a good number of them still cling to the traditional method as evidenced by the computed weighted mean value of 4.08. The results manifest that these teachers up to this time had not shelved the old method in teaching elementary agriculture. This may be due to the fact that they do no have the needed technical skills in teaching elementary agriculture.

Techniques Used by the Teachers. Methods of teaching have to be supplemented by appropriated techniques in order to be effective. These techniques are aimed to effectively teach elementary agriculture based upon the theory of Eduard L. Thorndike – the theory of connectionism. (Hilgard and Bower, 1966). After the teacher may have exhausted the chalks while doing the questin and answer method, the students may be taken into the farm to see for themselves and develop in them the "bond" or connect-

ion with what has been heard. As the pupils are taken for a farm visitation, the bond or connection gain in the classroom may be strengthened or weakened. When a modifiable connection is made and is accompanied by or followed by a satisfying visit, the strength of the "bond" is increased; if the visit is annoying, the strength of the "bond" may decrease. However, there is a need to supplement methods of teaching to have an honest learning by the pupils – thus, this aspect was included in the study.

In fact, teaching of agriculture in all levels of education, (primary, elementary, secondary and tertiary), requires that all senses of the pupils be involved. The pupils must hear, see, touch, smell and taste.

A close perusal of the results of the investigation showed that Item 1, "farm visitation," 103 of the respondents reported the technique to be "very relevant." One hundred and eight claimed that it was "relevant." Thirty reported that this technique was "slightly relevant," and the remaining nine respondents claimed that it was "irrelevant." The computed weighted mean value for this item was 4.22 with an equivalent descriptive rating of "relevant."

With item 2, "farm experiment," 105 of the group reported the technique as "very relevant." One hundred and six claimed it as "relevant," 33 reported it in the "slightly relevant" category. Six, however, reported the technique as "irrelevant." The computed weighted mean value yielded 4.24 or a descriptive rating of "relevant." (See Table 8.)

Approaches Used by the Teachers. In order to become an effective teacher, one has to utilize different methods, techniques, as well as approaches. Neverthelesss, approaches have to fit the condition in order to supplement the methods and techniques used.

In practice, it can be detected that even in cases where different teachers use one method of teaching they may differ in approaches. For instance, a teacher may deliver a lecture (lecture

Table 8

TECHNIQUES USED BY THE TEACHERS

TECHNIQUE USED	5	4	3	2	1	TOTAL	WM	DR
Farm Visitation	103	108	30	9	–	250	4.22	Relevant
Farm Experiment	105	106	33	6	–	250	4.24	Relevant
				WEIGHTED AVERAGE			4.23	Relevant

LEGEND:

5 - Very Relevant
4 - Relevant
3 - Slightly Relevant
2 - Irrelevant
1 - Very Irrelevant
WM - Weighted Mean
DR - Descriptive Rating

method), in a classroom with chalk, eraser and a blackboard, but others can do it without such instructional materials.

The results of the investigation in this aspect showed that with Item 1, "traditional approach," 14 of the respondents reported this aspect in the "very relevant" category. Thirthy-eight claimed that it was "relevant." Forty reported the aspect in the "slightly relevant" category. Fifty-three claimed it was "irrelevant," and the remaining 105 of the total 250 respondents claimed that this aspect was "very irrelevant." The computed weighted mean value yielded 2.21 with an equivalent descriptive rating of "irrelevant."

With Item 2, "practicum approach," 93 of the group under study reported this aspect to be in the "very relevant" category. One hundred forty claimed that it was "relevant." Seventeen reported the aspect as "slightly relevant." No responses were registered in the "irrelevant" and "very irrelevant" categories. The computed weighted mean value for this item was 4.30 or "relevant."

The general computed weighted average mean value was 3.26 with an equivalent descriptive rating of "slightly relevant."

From the results, it could be inferred that the most favored approach was the practicum approach as evidenced by the weighted mean value of 4.30 or "relevant." The reason behind may be due to the fact that teaching agriculture can hardly be accomplished in the classroom. Tilling the soil, pulverizing the soil, fertilizing the plants need to be learned in a practical way. (See Table 9.)

Instructional Materials Utilized by the Teachers

Agriculture is both a science and an art. As an art, it is essentially a practical subject in school. The apparatus and materials which are to be used in the laboratory and in the lecture room are important teaching aids in the learning of the pupils.

Instructional materials are as important as the skills of the

Table 9

APPROACHES USED BY THE TEACHERS

APPROACHES USED	5	4	3	2	1	TOTAL	WM	DR
Traditional Approach	14	38	40	53	105	250	2.21	Irrelevant
Practicum Approach	93	140	17	–	–	250	4.30	Relevant
				WEIGHTED AVERAGE			3.26	Slightly Relevant

LEGEND:

5 - Very Relevant
4 - Relevant
3 - Slightly Relevant
2 - Irrelevant
1 - Very Irrelevant
WM - Weighted Mean
DR – Descriptive Rating

teachers, the methods, the techniques and the approaches used by the teachers. A pupil learns that a shovel can be used to dig a hole. Using the shovel in digging would impress upon his mind that a shovel is for digging holes.

Instructional materials are included in the study to establish status of the materials used in the teaching of elementary agriculture in the area studied.

The writer does not equate instructional materials to visual aids. Visual aids are used to teach the pupils by allowing them to view how the apparatus works, but in agriculture, the pupils are required to work with the apparatus.

The study revealed that textbooks are "more useful" than a "handbook in agriculture." In the case of farm implements, the findings revealed that teachers believed that hand trowels are "much useful" compared to all other implements.

Textbooks. With Item 1, "textbooks in elementary agriculture," 40 of the respondents reported that such textbooks were "very useful." One hundred three claimed it was "much useful." One hundred on the other hand, reported that it was "useful," and the remaining seven of the total 250 respondents claimed that it was "slightly useful." The computed weighted mean value yielded 3.70 or a descriptive rating of "much useful."

With Item 2, "handbooks in agriculture," 39 of the respondents revealed that this subject was "very useful." One hundred and two claimed it was "much useful." Ninety-seven claimed that it was "useful," and the remaining 13 respondents reported that it was "slightly useful." The computed weighted mean value for this item was 3.46 or "useful."

From the results of the investigation, it could be inferred that handbooks in agriculture were found to be less important than textbooks. The reasons probably will include one or more of the following: Handbook contents do not cater to the needs of the community. Secondly, resources which are available in the community are not within the scope of the handbook. Thirdly,

the handbooks are too generalized in nature. Lastly, the availability of the textbooks and handbooks might have influenced the results of the study. (See Table 10.)

Farm Implements Used. With Item 2.1, "shovel," 140 of the respondents reported this instructional material to be in the "very useful" category. One hundred and eight claimed this item as "much useful." Only two claimed this item in the "useful" category. The computed weighted mean value for this item registered 4.50 or descriptive rating of "much useful."

With Item 2.2, "spading fork," 141 of the group under investigation reported this item as "very useful." One hundred and nine claimed it as "much useful." No responses were noted in the "useful," "slightly useful" and the "not useful" categories. The computed weighted mean value for this item was 4.56 or "very useful."

With Item 2.3, "spade," 140 of the respondents claimed this instructional material to be "very useful." One hundred three reported it in the "much useful" category, while the remaining seven indicated this item as "useful." The computed weighted mean value registered 4.53 or "much useful."

With Item 2.4, "tractor," 120 of the group under study reported this instructional material in the "very useful" category. One hundred five, on the other hand, claimed that it was "much useful." The computed weighted mean value yielded 4.38, with an equivalent descriptive rating of "much useful."

With Item 2.5, "pails," 141 of the respondents reported this item to be in the "very useful" category. One hundred indicated it to be in the "much useful" category. The remaining nine of the total 250 respondents reported this item to be "useful." The computed weighted mean value was 4.52 or "much useful."

With Item 2.6, "hand trowels," 160 of the respondents reported this item in the "very useful" category. Ninety claimed it to be "much useful" category. No perception rratings were noted

Table 10

TEXTBOOKS AND HANDBOOKS IN AGRICULTURE
USED BY THE TEACHERS

BOOK USED	5	4	3	2	2	TOTAL	WM	DR
Textbook in Elementary Agriculture	40	103	107	7	–	250	3.70	Much Useful
Handbooks in Agriculture	38	102	97	13	–	250	3.46	Useful
			WEIGHTED AVERAGE				3.58	Much Useful

LEGEND:

5 - Very Useful
4 - Much Useful
3 - Useful
2 - Slightly Useful
1 - Not Useful
WM - Weighted Mean
DR – Descriptive Rating

in the "useful," "slightly useful" and "not useful" categories. The computed weighted mean value was 4.64 with an equivalent descriptive rating of "very useful."

Based on the results of the investigation, the respondents in general feel that hand trowels are very useful in the teaching of elementary agriculture. The reactions of the respondents could be attributed to one or more of the following: (1) shovels, spades and spading forks are too heavy for the children in the elementary schools; (2) tractors will be too expensive for the elementary school; (3) hand trowels are very handy tools for the children to use in pulverizing soil; (4) lastly, hand trowels are the usual supply tools in the elementary schools. (See Table 11.)

Subject Coverages. The subject coverages were classified into five major groups identified to be common in the community. These five subject coverages were analyzed in terms of their usefulness to the teachers teaching elementary agriculture.

Table 12 shows the usefulness of the five subject coverages as perceived by the 250 teachers teaching elementary agriculture. It will be noted that the five subject coverages received an unequal weighted mean value in terms of their usefulness. While all of the five subject coverages obtained ratings above four, which indicate that these were all useful, they varied in the degree. Livestock will include all large animals except cattle. Cattle raising was found to be the most useful to teach in the area of the study. Comparing livestock and cattle, cattle is found more useful in this study.

Careful perusal of the results of the study revealed that with item 3.1, "gardening," 140 of the group indicated this subject coverage as "very useful." One hundred five reported it as "much useful." Five claimed it to be in the "useful" category. The computed weighted mean value for this subject yielded 4.54 with an equivalent descriptive rating of "much useful."

With Item 3.2, "livestock," to include all other large animals aside from cattle, 150 of the respondents rated this subject cove-

Table 11

FARM IMPLEMENT USED BY THE TEACHERS

FARM IMPLEMENTS USED	5	4	3	2	1	TOTAL	WM	DR
Shovel	140	108	2	–	–	250	4.50	Much Useful
Spading Fork	141	109	–	–	–	250	4.56	Very Useful
Spade	140	103	7	–	–	250	4.53	Much Useful
Tractor	120	105	25	–	–	250	4.38	Much Useful
Pails	141	100	9	–	–	250	4.52	Much Useful
Hand Trowels	160	90	–	–	–	250	4.64	Very Useful
					WEIGHTED AVERAGE		4.52	Much Useful

LEGEND:

5 - Very Useful
4 - Much Useful
3 - Useful
2 - Slightly Useful
1 - Not Useful
WM - Weighted Mean
DR – Descriptive Rating

rage as "very useful" to the pupils. Ninety reported it in the "much useful" category and the remaining 10 of the total 250 respondents claimed that this subject matter was "useful." The computed weighted mean value for this subject registered 4.56 or "very useful."

With Item 3.3, "goat," 146 of the group under study rated this aspect in the "very useful" category. Ninety reported it in the "much useful" category and the remaining 14 in the "useful" category. The computed weighted mean value was 4.52 or "much useful."

With Item 3.4, "cattle," 147 of the respondents registered a "very useful" rating for this subject coverage. One hundred registered a "much useful" gradation. The remaining three of the total 250 respondents rated it in the "useful" category. The computed weighted mean value registered 4.57 or "very useful."

With Item 3.5, "poultry," 141 of the respondents reported this subject coverage in the "very useful" category. One hundred two rated it in the "much useful" level. Seven revealed that this aspect was "useful." The computed weighted mean value for this subject was 4.53 or "much useful." The general weighted average mean value for all the subject coverages was 4.38 with an equivalent descriptive rating of "muchuseful." The results indicated that the five subject coverage identified in the community are to be taught in the elementary schools whenever possible.

"Cattle" as a subject is the most favored, being the highest in weighted mean value. This inferred that cattle-raising is one activity very important to the people in the area studied. The reasons for this result could be one or more of the following: (1) the traditional custom of the Maranaos is that in every marriage agreement, one of the principal dowries is cattle; (2) Maranao tradition includes that the wealth of the family can be determined by the number of cattle it owns; (3) the area covered in the study has a large area of untouched land and at the time this study was conducted, the land is utilized as pasture area; (4) aside from the carabao, Maranaos also trained bulls as working animals; (5) and

lastly, beef from the cattle is the other alternate source of protein for the Maranaos.

During the interview, the respondents claimed that there is scarcity of cattle around the vicinity, and that this scarcity was due to the fast slaughtering of these animals to supply meat for the Province of Lanao del Sur and Marawi City. The reason may be due to the fact that hogs are not allowed in the Muslim community and carabaos are protected by law.

Table 12

SUBJECT COVERAGE NEEDED TO BE TAUGHT AS POINTED OUT BY THE TEACHERS

SUBJECT COVERAGES	5	4	3	2	1	TOTAL	WM	DR
Gardening	140	105	5	–	–	250	4.54	Much Useful
Livestock	150	90	10	–	–	250	4.56	Very Useful
Goat	146	90	14	–	–	250	4.52	Much Useful
Cattle	147	100	3	–	–	250	4.57	Very Useful
Poultry	141	102	7	–	–	250	4.53	Much Useful
					WEIGHTED AVERAGE		4.54	Much Useful

LEGEND:

5 - Very Useful
4 - Much Useful
3 - Useful
2 - Slightly Useful
1 - Not Useful
WM - Weighted Mean
DR - Descriptive Rating

Conclusions

The following conclusions may be drawn from the findings of this study:

1. The respondents in general do not possess the special skills in agriculture, considering that only few of them were graduates of Bachelor of Science in Agriculture (BSA).

2. Seminars in agriculture are the most common in-service training attended by the teachers teaching elementary agriculture. Only few (32.4 percent) attempted to pursue graduate programs in agriculture.

3. On the whole, two observations can be drawn on the attitude of the teachers towards agriculture. First, the teachers were not too receptive towards agriculture, considering that only few of them exerted efforts to grow professionally. Secondarily, the teachers agreed that teaching agriculture should start at the elementary level. They further agreed that everybody should have knowledge of agriculture to enhance food production.

4. The teachers do not cling to the usual blackboard, chalk and eraser method of teaching, but rather approach the teaching of elementary agriculture through the *practical way* or the "practicum approach."

5. It can be drawn from the findings that rice production, vegetable production, cattle and livestock production are the subjects in which the teachers need worthwhile training, because these subjects were found to be relevant and useful in the community.

6. Finally, based on the present status of teaching elementary agriculture and on the perception of the Grade V teachers, there is a need to develop research and training programs for all teachers teaching elementary agriculture in the two divisions of Lanao del Sur and in the Marawi City division.

Implications

Providing continuous training to teachers teaching elementary agriculture constitutes one of the most important functions

of the Ministry of Education and Culture. To be worth the time, money and effort being invested in it, such training must be aimed at making the teachers professionally more equipped and effective in their teaching job. Any training activity that falls short of this objective hardly deserves the time and the effort given it.

The planning or programming of a training scheme that is basically oriented towards achieving this objective requires more than just a random or arbitrary selection of subject matter areas to be contained in it. This necessitates the involvement of the teachers themselves to be able to avail of their honestly felt needs for training, so that subject areas or coverages are within the interest of the teachers concerned and the community. Unless this is done, a training scheme, no matter how well designed by those who formulated it, will hardly amount to any thing constructive on the part of the recepients of the training.

In this context, it is felt that the findings in this study have significant implications worth bearing in mind in the designing and planning of training programs for teachers teaching agriculture in the three divisions of Lanao del Sur and Marawi City.

With reference to the profile of respondents, for instance, this study showed that while the three divisions of public schools include and offer agriculture in Grade V, there is a need to train the teachers. The teachers teaching elementary agriculture upgraded themselves only through seminars. Few ever attempted to finish a graduate degree in agriculture. These elementary agriculture teachers did not even try to conduct researches in agriculture to upgrade their teaching competencies. From this finding, it is clear that the MEC Grade V teachers in the area of study need enough incentives to bring them back to school and undergo researches while on their job.

With reference to the subjects in agriculture to be taught in public elementary schools were the teachers need more training, this study showed that subjects in agriculture were felt needed in varied degrees. Need for training in one subject is apparently felt more than the other subjects rated. The findings were conso-

nant to the belief that technology transfer should start from the people, where they are and what they have in the community.

In animal science, the study showed that subjects in cattle raising are more needed or relevant for teaching in the elementay schools in the area of study. From the standpoint of what may be considered a sound and realistic training program, this finding implies that priorities should thus be observed in determining the subject coverages to be included and emphasized in any contemplated training scheme for teachers. It further implies that the planners of such training scheme must also look into the resources of the community. For instance, cattle production was identified to be a very relevant subject matter, because Maranao weddings always include cattle as a principal dowry. Essentially, such priorities and listing of subject coverages should be determined on the basis of what the would-be trainees and pupils themselves consider the subjects needed to be taught in the school.

It should be pointed out also that in terms of training in agriculture, the teachers agreed that subjects in agriculture such as rice and vegetable production, livestock, cattle and poultry production be included in the elementary level. This finding implies that the teachers felt that elementary pupils should be well taught in agriculture while young to make them entrepreneurial citizens. In the event that they will drop out from the schools for some reasons or another, they can live decently through farming.

This study showed many of the teacher-respondents still use the traditional method of teaching agriculture, by the use of blackboard, chalk and eraser method. This implies that the teachers need to be trained through the practicum method of learning-by-doing method through field experiments. Agriculture subjects are difficult to teach in the classroom.

Furthermore, instructional materials for teaching elementary agriculture are insufficient. The teacher-respondents believed that instructional materials should include band tools which are the commonest tools readily available in the community. This finding implies that automation and farm mechanization are not yet felt

needs in the Province of Lanao del Sur and Marawi City as of 1981-1982.

It is perhaps proper to mention at this point that planning a scheme of teachers should not be the exclusive concern of the people responsible for conducting the training. Rather, in the interest of developing a truly meaningful training program, the involvement of the people to be trained should be considered in the process of planning, especially in the matter of determining the content and direction of such training.

The significance of such involvement will be realized when one considers the fact that among those who would be affected by or who have something to do with such training, the individuals to be trained are admittedly in the best position to know what their training needs are. This is the major consideration in determining the subject coverages, the methods, techniques, approaches and instructional materials for a worthwhile training scheme. Unless the individuals to be trained are themselves involved in this effort, there is no guarantee that a training scheme designed for them would truly represent their felt training needs, based on their status and working conditions in their respective schools and communities.

Recommendations

In the light of the foregoing findings and conclusions, the researcher recommends the following:

1. Inasmuch as the majority of the respondents are not graduates of agricultural courses, it is recommended that they go back to school to pursue a second degree and graduate courses in agriculture.

2. The findings showed that only few, (6 percent) of the respondents have conducted research work in agriculture. It is therefore recommended that these teachers be encouraged to conduct simple researches in agriculture in their respective schools.

3. The results of the investigation showed that there are

teachers who still utilize the traditional method of teaching. Efforts should be exerted by the school administrators to conduct demonstrations and pilot classes in which the practicum approach and techniques are taught.

4. In order to make the teachers receptive to the teaching of agriculture, establishment of demonstration farms is recommended for all elementary schools in the Province of Lanao del Sur and the City of Marawi.

5. Considering the possible differences that exist in the working situations and requirements among provinces and regions, it is likely that the training needs of teachers as found in this study may not necessarily reflect the training needs of teachers in other provinces. Therefore, it is recommended that a similar but more extensive study be conducted in other provinces.

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