Training for relevance in agriculture: A critical appraisal of the sub-degree training programme in the former Western State of Nigeria.

I. ADEFOLU AKINBODE & P. A. LADIPO

Department of Extension Education and Rural Sociology, University of Ife, Ile-Ife, Nigeria

Abstract

Using Project Performance Budgeting System (PPBS) as the framework within which the agricultural change agents are operating, the study examined the adequacy of practical experience acquired by the graduates of the three schools of agriculture included in this study. It also examined the modifications that would be required in the schools' curricula to meet the needs of project-oriented agricultural services.

The data for the study were gathered from the instructors in three schools (Ibadan and Akure Schools of Agriculture and Ibadan School of Animal Health) as well as from the administrators of agricultural programmes and field level extension workers in the former Western State of Nigeria.

Practical training was found to be inadequate due to lack of equipment, funds, time and experience on the part of the trainers. This in addition to the project-orientation of agricultural services (the situation in which the graduates of the schools are expected to function) call for some degree of specialization in training if the change agents are to perform effectively. Recommendations are made for the introduction of broad specialization. Specific suggestions are also made on how positive attitudes towards agriculture could be inculcated into members of the public in general and into agricultural change agents-in-training in particular.

Introduction

The widespread and urgent need for well-trained agricultural field-level workers is recognized and their shortages seen as a major factor limiting agricultural progress in many countries today.

A considerable amount of work has been done on the problem of determining what constitutes an adequate and relevant training programme for field-level agricultural workers in general, as well as for operating in a particular system. Clark (1967) is of the opinion that to be effective, an agricultural change agent requires training in three broad areas of knowledge. He should acquire educational skills, administrative skills and technical competence in the various subject-matter areas pertaining to agriculture.

On the other hand, the criticisms of specific training programmes in the former Western State of Nigeria have focussed attention on a number of shortcomings. These include the inadequacy of practical experience, insufficiency of materials and equipment, lack of relevance of the whole training programme to the roles expected of the trainees after completing the training, and the orientation of the trainees to agriculture and to working with farmers in the rural areas.

On the adequacy of practical experience, Kincaid (1968) in his summary of a consortium report states that the most critical problem in non-degree level agricultural training in Nigeria is the absence of "field practice" orientation. He goes on:

Non-degree training, especially for those who are to work in field service activities must strive to create a desire to "make things happen" in rural development at the village level . . . more concerted effort must be made to introduce meaningful practical field experience into the . . . training while at the same time providing sufficient knowledge of basic principles and techniques of agricultural production, extension methodology, etc.

Butler (1969) made a similar observation on the training programme for field agricultural agents. His study of four agricultural and related schools in the former Western State of Nigeria reveals that insufficient and/or inadequate emphasis was placed on "learning by doing" in each of the institutions.

With regards to sufficiency of equipment and materials, previous studies have described the situation as unsatisfactory. In Butler's study, trainees described their practical training as "observing" rather than "doing". This, it was pointed out, was due to the fact that equipment for practicals was not always available and some items were only discussed or shown in pictures instead of being seen and used.

Kidd (1968) alluded to the problem of relevance of extension agents' knowledge to the practical problems of their clientele. Less than half of the farmers he studied felt that the local extension workers know farmers' problems. This, it is hypothesized, may be due to the gap in the agents' knowledge regarding the reality of the conditions in which farmers live including their customs, values and aspirations. If this is so, then an obstacle has been placed in the way of farmers adopting recommendations by agents.

Kincaid (1968) in his review of some consortium studies confirmed that the problem of relevance still remains in some aspects of the training programme for field extension workers in the former Western State. He cited the examples of teaching "standard deviation" in farm management and the setting and operation of an "electric fence" for dairy cattle management and doubted the relevance of these concepts in the job assignments of field agricultural agents in the present day Nigeria.

Ogunfowora (1968) in his own contribution to the discussions on how to make the extension system more effective, states that the morale of the agents needs to be raised through education and by encouraging them to become participants rather than mere observers or information carriers in the struggle to develop the rural sector. Additional available information on the orientation of the trainees concerns the reasons for accepting training in non-degree agricultural programmes, personal future educational aspirations and the rationale for such aspirations. This investigation revealed that about half of the respondents could not say, in meaningful terms, why they chose to be trained as field-level agriculturists. Another 32 percent of the trainees gave practical or pragmatic-type answers; while 11 percent gave idealistic or theoretical answers. With regards to future educational aspirations, all the trainees he studied were in agreement that the most desired level of education would be a Bachelor's degree. Fifteen percent aimed for a Master's or Ph.D. level of education. And when the trainees were asked to give the reasons for their educational aspirations, about 23 percent

gave practical reasons (e.g. to acquire more knowledge in modern agriculture), another 33 percent gave idealistic reasons (e.g. to have a maximum knowledge of agriculture); while 10 percent preferred training in another subject area, presumably with a view to moving out of agriculture (Butler, 1969). These facts on the orientation of the field-level agricultural workers-to-be raise doubts as to whether they were sufficiently, socially, culturally and psychologically prepared to assume their roles as rural change agents.

Another major issue dealt with in this study is the relationship between training and the recently adopted system of project or commodity programming. Experience with the first and second National Development Plans showed that there was no relationship between agricultural development plans and budget provisions. This led to the introduction of the project programming and budgeting system in agriculture on an experimental basis in the former Western State of Nigeria in 1974. Project Performance Budgeting System (PPBS) is in line with the idea put forward by the Udoji Commission on Public Service Review (1974) that developing nations have to think more of increasing the profits or direct benefits to the greatest number of their citizens. The Commission recommended the adoption of the production or result-oriented management approaches (Project Performance Budgeting System, Management-by-Objectives and Project Management) throughout the country's Public Service.

Apart from the increase in number of staff required (Akinyele, 1976) the introduction of PPBS in the former Western State of Nigeria also brought changes in the type of work done by field-level workers. Using government guidelines, project officers are expected to identify viable projects based on the needs of their clients, prepare lists of project inputs, their costs and the revenues expected from the outputs, plan programmes of work, implement and then monitor and submit progress reports on each project. These job requirements undoubtedly call for in-depth knowledge of the project on which an officer is working, as well as managerial skills.

It has long been recognized that at all levels of the new system, there would be additional training needs. One of the pioneers of the system Yekezkel Dror (1968) pointed out that new professional staff would be needed at the policy-making level. Even during the period of general rather than project-oriented agricultural services, Williams and Williams (1972) observed the dearth of project or subject-matter specialists in the Western State of Nigeria as follows:

"What we consider to be the most important weakness of the Ministry of Agriculture and Natural Resources organizational structure is the lack of subject-matter specialists to help the agents do a better job. With low background training of most of the extension staff in the field, there is a clear need to strengthen the service with a cadre of well trained specialists in major areas of extension activities . . .."

It was in recognition of the need for new knowledge for working with the new project management approach that extensive training arrangements were made by the Ministry, ranging from formal University education to short-term, on-the-job training to prepare the personnel (Akinyele, 1976). The question arises as to whether on-the-job training in addition

to the general training received in the schools of agriculture have been adequate preparation for project management.

The purpose of this study, therefore, is to analyse training in the light of criticisms which were made of agents and trainees prepared for the general purpose agricultural service which was operating prior to April 1974. Training is also considered in terms of the jobs field workers are presently performing under PPBS.

Three major areas of focus studied include: 1) the adequacy of practical experience provided by the training programmes; 2) the training implications of project-oriented agricultural services; and 3) the possibilities of instituting changes which might effect greater relevance in training and a more client-oriented approach to agriculture.

It should be mentioned that since the field work for this study was completed 'zonal organization' which is both a structural and procedural reorganization has been introduced (Akinyele, 1976). This change, however, does not invalidate the basis of this study since its central concern is to find out whether the training programmes have kept pace with changes in the organization.

Methodology

Data collection

The data used in this study were gathered between July 1974 and February 1976 from three categories of staff - the administrators and the field-level workers - employed by the former Western State of Nigeria, Ministry of Agriculture and Natural Resources (MANR), and the instructors in the Schools of Agriculture, Ibadan and Akure and the School of Animal Health, Ibadan.

The information from the administrators and instructors were solicited using an open-ended interview guide. Since only the headquarters administrators, numbering only five, were involved, they were all interviewed. A cross-section of the instructors covering all the agricultural subject-matter areas were interviewed. Thus, eleven interviews were completed with the instructors.

The data from the field-level workers were collected using a combination of closed-ended and open-ended questions. Personal visits were made by the two researchers to the twenty-four agricultural divisions in the State to distribute the questionnaires to selected officers. In each division, the divisional agricultural officer was requested to provide information on each of the PPBS projects included in our sample which was being carried on in that division. In addition, three field-level operators (in most cases, one Agricultural Superintendent plus two Agricultural Assistants) were asked to provide data on each project in which they were involved. The projects included in our sample are: rice, maize, cassava, banana/plantain, pineapples, cocoa (C.D.U.)*, kola seedlings, coffee seedlings, oil palm seedlings, beef (finishing), poultry, sheep and goats and rural dairy. The selection of the projects, based on the level of appropriations to each project was such that projects with varying levels of appropriation were represented in the sample. The completed questionnaires were returned by post. However, because a

number of field-level workers were responsible for more than one project, only 78 usable questionnaires were completed and returned by this group of respondents.

Analysis of data

The data were analysed using frequency counts, percentages and correlation statistics.

Results and discussions

Adequacy of practical experience

The tutors were asked to discuss the amount of time devoted to practicals. This ranged from 50 percent of in-school time for arable crops to less than 10 percent for extension. Tutors teaching animal science and extension indicated that more time should be spent on practicals, while those involved with crops and farm management felt that students were given adequate experience.

Lack of support for practical teaching was cited by all the tutors as a major problem. Scarcity of animals and equipment has led to the replacement of practicals with demonstration, or at best, a very brief period of applied experience per student in most subjects. Practical experience in extension has been severely limited by lack of transportation and funding.

One of the basic principles of the teaching/learning process is that learning is facilitated and becomes more effective when cognitive and psychomotor aspects are taught together. This investigation therefore explored the pattern of arranging theory and practical lessons.

In all subjects except arable crops, theory and practical experience were made available concurrently. Because of the highly seasonal requirements of arable crops, it was not possible to coordinate theory and practice for this subject.

Since lack of funding was one of the main deterrents to student participation in practicals, the possibilities of increasing practical experience and cutting costs by making students responsible for the running of school farms was explored. The majority of tutors felt that the schools must continue to manage the farms while the students should perform some of the operations as they are currently doing. The main consideration was lack of time. Trainees cannot afford to spend the time necessary for managerial duties and tutors would not have time to supervise students if they were responsible for more of the operations on the farm. On the other hand, two of the tutors realized that in order to teach labour management and costing, trainees should be brought into the management, at least at the advisory level.

If, as shown above, the practical experience of trainees is limited by lack of equipment, funding, and time, then it is important that the tutors

---

* *Cocoa Development Unit.*

themselves have considerable field experience which they can pass along. On the average, tutors had had about three years of field experience before joining the schools. The range was from no experience to twelve years.

Relevance of training.

Aside from the question of the adequacy of practical experience, other factors bear on the ability of the field worker to apply his training. One of these is the integration of all relevant subjects on a commodity basis. It was found that in the schools of agriculture, the general courses are organized along disciplines, but courses on specific crops are taught in packages. Thus, entomology, for example, is a separate course and is also taught as pest control for arable crops. In addition, farm management and extension education focus on particular commodities in order to teach the application of their disciplines in problem solving. However, at the School of Animal Health, courses were taught by disciplines, e.g. physiology. It was felt that there was a need to integrate disciplines and teach them in packages related to the various animals, and that this would require a change in curriculum.

In addition to being able to focus different disciplines on a particular commodity, field workers have to know how to apply their skills under varying conditions. This requires that they be able to assess farming conditions by carrying out village surveys. The need for this was recognized in all three schools. However, field surveys were only incorporated into the course curriculum of the diploma (Agricultural Superintendent or A.S.) trainees to whom farm appraisal, opportunity costing and social research methods were taught.

It was found that village survey methods will be taught at the certificate level when more staff becomes available and that it may also be incorporated into the curriculum for trainees in animal health.

Responsibility for training students to work with farmers fell entirely on the agricultural economics and extension tutors. There was a heavy reliance on class exercises for practical experience since no field experience was available for this aspect of the courses. This applied to training for working with leaders and groups, programme planning, and personnel management. It was felt that more opportunity should be provided for working with farmers and labourers.

All of the tutors said that they used a problem-solving approach to teaching and that the problems posed were usually of a technical nature. Lack of access to actual situations made it necessary to teach problem-solving through the use of case studies, farm records and budgets, class assignments, and discussion sessions.

Orientation to agriculture and rural life

The problem of the field workers' apparent lack of a client-orientation was discussed with administrators and tutors. Several insights were provided as to the cause of the gap between the values and norms of field workers and those of their parents' social system. Some

respondents saw the problem as beginning in primary schools when parents give pupils too much respect and preferential treatment. This aspect of the problem is even worse at the secondary school level.

Others held the treatment of agriculture as a subject in primary and secondary schools responsible. Too often, agriculture-related tasks are assigned as punishments. Even where this does not happen, the persistence of traditional methods and tools fails to make agriculture an attractive occupational choice.

Another factor seen as affecting agents' relationships with farmers is the lack of incentive for working in rural areas. No effort is made towards compensating officers for the hardships they face at rural posts. Consequently, most hope to be redeployed to a large town.

Suggestions for improving the orientation of agents included the restructuring of agriculture in primary and secondary schools, the provision of incentives for rural assignments, and mass education to raise the stastus of farmers and farming. These answers did not focus on actions to be taken by the schools of agriculture because these schools were not seen as contributing to the problem. However, when asked what could be done by the schools to bridge the gap, respondents suggested that comprehensive courses on rural life be taught and that efforts be made to change the academic orientation of tutors themselves.

The idea of instituting an "open-house", "parents' day", or "field day for farmers" at the schools was thought to have merit as a public relations approach or as a way of educating farmers. But most respondents felt that these approaches would not serve much to re-emphasize the importance of the traditional social system to the trainees.

A more useful approach to putting trainees in contact with farmers was seen in the suggestion that students be sent to the field for short-term research projects. It was found that this suggestion was in operation in all the courses taught to the diploma (A.S.) class even though the agricultural economics tutors thought that such projects might not be useful, especially if supervisors had to do most of the work (as it happened in many cases) in order to make the work presentable. Student projects had not been introduced into the certificate (Agricultural Assistant) courses as it was thought unnecessary, buttressed by the view that there was no time for it in the already crowded timetable.

The administrators supported the idea of student projects especially if it would be used for evaluating the Ministry's programmes. They, however, envisaged the problem of accommodation and transportation when a sizeable number of students become involved.

Training implications of project programming

It was found that while job assignments are made on the basis of specific projects, trainees still undergo study in all areas of agriculture. Agents were asked how well their training had prepared them for their present job assignments. The responses were: very well (80%), fairly well (13%), and not at all (1%). Six percent of the respondents had not been trained by the schools of agriculture.

This finding was encouraging and was partially explained by the fact

that the hours spent on subjects seems to be related to the importance of these subjects in terms of acreage under corresponding projects. For example, annual crops take up the greatest number of hours in the A.S. training programme and also the greatest acreage under Ministry projects. The rank correlation between hours devoted to subjects and acreage devoted to corresponding projects was found to be strongly positive, (0.8) even though it is not statistically significant.

A further reflection of the specific nature of job assignments was given when agents listed the courses which were most useful to them in their present work. Courses such as arable crops, permanent crops, and extension education which are applicable in the greatest number of assignments ranked high (71%, 51% and 51% respectively). These were followed by agricultural engineering (42%) and agricultural economics (42%). Courses which are of a general or theoretical nature were mentioned less frequently: science (5%), field experimentation (10%), and general agriculture (18%). As was expected, subjects which are not heavily represented in projects were not frequently mentioned: livestock (23%) and horticulture (5%).

A similar pattern emerged when agents listed the areas in which they could have used more training to prepare them for their present situations. This is shown in table below (Table 1).

TABLE 1: AREAS WHERE MORE TRAINING WOULD HAVE BEEN USEFUL

Subject areas	*Percent of respondents*
Arable crops	44
Extension/Agricultural Economics	41
Permanent crops	32
Agricultural Engineering	15
Livestock	10
General Agriculture	10
Plant Protection	6
Soil Science	5
Field Experimentation	1
No Answer	19

Only 19 percent were completely satisfied with their training and 83 percent actually wanted further training. When asked what type of arrangement would best meet their needs, 50 percent mention on-the-job training, and 31 percent wanted in-school formal training. This indicates that unlike the trainees interviewed by Butler (1969), very few agents are aspiring to degrees. It was found that the Ministry's on-the-job training programme for the use of PPBS had reached only 51 percent of the agents.

It appears that since agents are now posted to specific projects, they could use more training related to projects and might need none in other subjects. The tutors and administrators were asked their views on introducing specialization into the curricula of the training schools. Most of the tutors felt that the situation is not yet ready fo commodity

specialization. The major concern seemed to be for the future of the agents: Will the Ministry hire them on the basis of their specialization? The reactions from the Ministry were mixed. One administrator called for some general training and some specialization at the certificate level, emphasizing the need to train for the job. But most favoured the continued training of generalists. They pointed out that general training allows for greater versatility and thus, flexibility in the deployment of staff. In addition, generalists are needed on farm settlements and for coordination of projects within geographical areas.

The point on versatility should be considered in the light of PPBS which has as one of its major advantages, the provision for long-term planning. If manpower is considered as one of the inputs into a project, then a five-year planning period would be sufficient to include the three years needed to train an A.S. specialized in any given commodity. Sudden redeployment of staff should not be necessary.

If manpower requirements were planned with the projects, it would be possible to know how many agents would be required for farm settlements and to train them in general agriculture. Other agents could be trained in areas of specialization corresponding to the areas under which the national research institutes are organized. This would facilitate the flow of research information from high level professionals to the trainees.

It is suggested here that broad specialization be introduced at the diploma level for agents programmed for specific projects. The basic and essential courses (e.g. agronomy, animal husbandry, mechanization, soil/water management and all the agricultural economics, extension education and rural sociology courses should be designated as core courses which all the trainees must take. Additional courses would be taken in other areas, such trainee choosing an area based on the government's planned priorities for projects and the trainee's own area of interest. These additional courses should be spread over the two years of training. Since agricultural officers receive general training in all but the last one or two years of their degree courses, these officers can be considered adequate to the task of coordinating various Ministry projects.

Several problems would be eliminated by adopting the type of broad specialization discussed above. There would be more depth to the training. More time would be available for practicals. Fewer people would be using the same equipment meant for the specialized courses, so that there would be more opportunity to practise skills. Finally, the cost of imparting unused knowledge would be eliminated.

Conclusions

Before making any conclusions, it is pertinent to discuss what seem to be the weaknesses of this study. One of these is the small size of the samples used. This problem is common with the unstructured data collection approach adopted in this study but it is compensated for by the comprehensiveness of the information gathered. Another factor which accounted for the small sample was the low return rate of questionnaires filled by the extension workers. This low return rate is characteristic of instruments expected to be returned by mail. The

second limitation of the study concerns the focus of the data. The data were collected only from within the organization. While this may have the disadvantage of lessening objectivity and reducing criticisms, it was thought desirable to know how those directly involved viewed training issues and what changes they themselves considered feasible.

Inadequacy of practicals was found to be due to lack of equipment, funding and time. To worsen the situation, some of the tutors had no field experience prior to taking up job in the schools. The first set of factors touches on policy matters. The management of the schools needs to decide whether it wants well-trained practical agriculturists or half-trained field agricultural workers at the expense of miseducating the farmers. Since making the first choice requires commitment and willingness to give necessary support, then the management, if this is the choice it makes, needs to change its attitudes towards the schools by giving adequate support both for capital development and recurrent expenses.

The problem of lack of adequate time for practicals needs to be re-examined alongside the objectives of the schools. The question that needs to be answered is whether the schools are established to train theoretical or practical agriculturists. Closely related to the problem of adequate time for practicals is the number of courses included in the curriculum for each programme. And tied to this is the age-long argument about specialist versus generalist training. Most of our respondents were opposed to specialization even at the first University degree level. If the present trend of development continues (i.e. project-oriented extension system), it is obvious that generalists are not going to be able to meet the challenge optimally. We have, therefore, recommended some degree of specialization. What we have in mind is not a narrow specialization. We are, in fact, going a little further than the single commodity specialization recommended by Williams and Williams (1972). The specialization we are suggesting should embrace a group of similar commodities (e.g. cereals specialists, root crops specialists, horticultural crops specialists, small animals specialists, poultry specialists, etc.) along the jurisdictional organization of the national agricultural research institutes. This will make interactions with these institutes easier and more meaningful.

The amount of field experience possessed by tutors may become less important as more opportunity is made for practical experience of the trainees themselves. However, it may be desirable to make field experience an important consideration when hiring tutors. During interviews with tutors, unsolicited information regarding their conditions of service brought to light the need to improve these conditions in order to retain and attract highly qualified manpower.

On the question of orientation, it has been suggested that the treatment given to agriculture in our primary and secondary schools be restructured, that mass education for raising the status of farming and farmers be mounted, and that incentives be given for rural assignments. The first two suggestions may be implemented through the 'Operation Feed the Nation' campaigns. Within the schools of agriculture, greater emphasis should be given to courses on rural life, and trainees should

be given the opportunity to live and work with rural people during their training period.

References

Akinyele, T. A. 1975. "The inaugural speech by the Permanent Secretary, Ministry of Agriculture and Natural Resources on the occasion of the launching of the zonal field organization for the Ministry", M.A.R.R. Ibadan and (2) M.A.N.R., "Staff Development", Ministry of Agriculture and Natural Resources, Ibadan (n.d.) (both mimeo.).

Akinyele, T. A. 1976. "P.P.B.S. in Western Nigeria: History, Progress and Problems", Paper presented at a *Symposium on productivity and efficiency in the Public Service*, Faculty of Administration, University of Ife.

Butler, R. O. 1969. *A study of selected non-degree agricultural training institutions in the Western State of* Nigeria, CSNRD-29, Michigan State University, East Lansin, Michigan, U.S.A.

Clark, Robert C. 1967. "Profesional development of extension officers", *Bulletin of Rural Economics and Sociology, 2*, 75-83.

Dror, Yehezkel 1969. "PPB and public policy-making system: some reflections on the papers by Bertram M. Gross and Allen Schide", *Public Administration Review, 29*, 152-154.

Federal Republic of Nigeria 1974. *Public Service Review Commission: Main Report,* Federal Ministry of Information, Lagos.

Kidd, D. W. 1968. *Factors affecting farmers' response to extension in Western Nigeria,* CSNRD-30, Michigan State Univeristy, East Lansing, Michigan, U.S.A.

Kincaid Jr., James M. 1968. *Strategies for the improvement of agricultural extension work and non-degree agricultural training in Nigeria,* CSNRD-13, Michigan State University, East Lansing, Michigan, U.S.A., p. 144.

Ogunfowora, O. 1968. "Agricultural extension services and improved farming practices in Western State of Nigeria", *Administration, 3*, 1-24.

Williams, S. K. Taiwo and Carol. E. Williams 1972. "Analytical study of agricultural extension services of the Western State of Nigeria", *Bulletin of Rural Economics and Sociology, 7*, 81-101.