Professional Competencies Needed by Teachers in Agricultural Colleges of Northern States in Nigeria

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The main goal of the agricultural colleges in northern Nigeria is to train agricultural technologists. The services of these technologists are needed in agricultural education, the River Basins Development Authorities, grain production companies, agricultural research stations, and a number of other projects set up by the federal government to boost food production. Additional goals were identified by Madaki (1982). These goals include conducting inservice workshops for agricultural field staff, organizing practical training, and conducting open houses for farmers. The goals and objectives of the colleges cannot be achieved without the availability of competent teachers. The World Conference on Agricultural Education and Training (1970) held in Copenhagen reported:

> ...of all aspects of agricultural education and training, the teacher is the most important. Without good teachers, competent at their work and possessing those qualities which enable them to inspire and develop the latent capacities of their students, agricultural education as a whole cannot function effectively. (p. 67)

This observation from the World Conference is as valid today as it was in 1970 and has relevance to the agricultural colleges in the states of northern Nigeria. The teachers in these colleges do not generally have pedagogical training. They are hired on the basis of their technical qualifications. Certification is not required of such teachers. Technical competence alone is inadequate in training institutions such as colleges of agriculture. The teachers also need professional competence which will enable them to inspire and develop the latent capacities of their students. This study was therefore focused on identifying these kinds of competencies.

Objectives

This study was designed to verify the professional competencies appropriate for the teachers in the agricultural colleges of northern Nigeria. The specific objectives examined were:

1. To identify the professional education competencies considered important for teachers in the agricultural colleges of

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northern states of Nigeria as perceived by teachers of the division of agricultural colleges, state agricultural colleges, and the administrators of the colleges;

2. To compare the attainment level of teaching competencies presently possessed by teachers in the division of agricultural colleges and state agricultural colleges;

3. To compare the attainment level of the graduate teachers with pedagogical training to those of the graduate teachers without pedagogical training; and

4. To suggest competencies useful for conducting a regular teaching workshop or inservice training.

Methods

There are 14 colleges of agriculture in the 10 states of northern Nigeria. Each state has at least one agricultural college. These colleges are collectively referred to in this text as State Agricultural Colleges (SAC). Four of the colleges are administered by Ahmadu Bello University, Zaria. These colleges are called the Division of Agricultural Colleges (DAC).

The population for this study consisted of all the DAC teachers (n = 105) and all the SAC teachers (n = 170), the chief agricultural officers (n = 10) in the Ministries of Agriculture, and the administrators of the DAC (n = 5). The last two subpopulations constituted the administrators of the colleges of agriculture.

A research instrument containing 113 professional competencies clustered into 12 categories, was developed using the performance-based teacher education (PBTE) modular list which was developed at the National Center for Research in Vocational Education in 1978. The instrument also included a list of training need items of potential agricultural extension workers in the northern states of Nigeria (Onazi, 1973). A Cronbach's alpha reliability coefficient was calculated for each of the 12 categories of competencies. The reliability scores ranged from .83 to .95. The reliability coefficient on the entire instrument was .98.

The instrument was administered by the researcher to the two groups of teachers and the administrators from May to August of 1982. Each group was asked to indicate the relative importance of each competency as well as their individual level of attainment for each competency. The descriptive method of research using a closed-form opinionnaire with a five point Likert-type scale was used in the data collection.

To analyze data pertaining to objective one, means were determined for DAC and SAC teachers and the administrators. For objectives two and three, the data obtained were analyzed using analysis

of variance at $p < .05$. To analyze objective four, the Pearson Moment Correlation Coefficient was used to determine the significance of relationship between the importance item and the teachers' attainment levels. The list of significant items evolved constituted a priority list for inservice/workshop training.

Major Findings

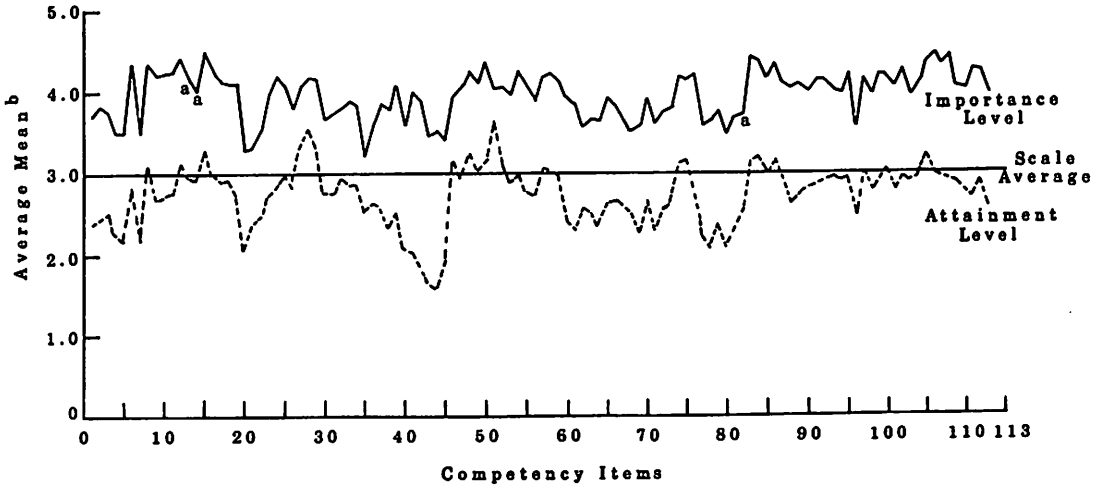
1. Each of the 113 competency items were rated important or very important (rating score ranges from 3.27 to 4.49). Of these competency lists, 76 (62%) were rated over 4.0 or "very important" by the two groups of respondents. Specifically, DAC and SAC teachers and the administrators differed significantly in only three out of the 113 competency items in rating the importance of the competencies. The three competencies were developing student performance objectives, developing unit of instruction, and providing learning experiences for students through contests (items number 13, 14, and 82 respectively). Figure 1 is a graphical representation of how the competencies were rated by the three groups.

2. The attainment levels of the DAC and SAC teachers were above a 3.0 mean score in 25 out of the 113 competencies. In the 88 others (78%), the teachers rated themselves below average. Figure 1 illustrates the attainment levels of these two groups. Comparing the perceived level of attainment of the DAC and SAC teachers on the 113 competencies, the two groups differed significantly in 53 (47%) of the items. The DAC teachers were on the average, older in age, longer in service, and had more members with higher qualifications than the SAC teachers. The SAC teachers have as high as 50% National Youth Service Corps (NYSC) members on their staff. These Corps members were directly from colleges and they serve for nine months.

3. The graduate teachers with pedagogical training constituted 13.6% of the teachers in the colleges. The competency level for teachers in this group was higher than their colleagues without pedagogical training in six of the 12 competency categories. The categories were instructional management, instructional execution, guidance, professional role and development, industrial attachment education, agricultural extension philosophy, organization, and administration.

4. Based on the significant relationship among the very important items and the teachers' attainment levels, a list of 52 competencies was prepared for the purpose of inservice and workshop training. The four competencies with the highest mean score for each category reported are shown in Table 1.

Fig. 1 - Rating of Competency Importance and Attainment Level as Perceived by DAC and SAC Teachers and Administrators



a. Item numbers 13, 14, and 82 show significant difference at .05 level among the three groups

b. Explanation of scale

Scale	Importance	Attainment
1	No importance	No competency
2	Little importance	Little competency
3	Important	Quite competent
4	Very important	Competent
5	Essential	Highly competent

Table 1

Priority List of Competencies Suggested for Inservice/Workshops in the Colleges of Agriculture

Competencies	$\bar{X}$
A. Program Planning, Development and Evaluation	
1. Developing program goals and objectives	4.37
2. Developing a course of study	4.32
3. Conducting a student follow-up program	4.18
4. Evaluating your vocational program	4.16
B. Instructional Planning	
1. Developing a lesson plan	4.47
2. Determining needs and interests of students	4.40
3. Developing student performance objectives	4.18
4. Preparing teacher made instructional materials	4.14
C. Instructional Execution	
1. Directing student laboratory experience	4.22
2. Using oral questioning techniques to facilitate learning	4.15
3. Summarizing a lesson	4.12
4. Introducing a lesson	4.10
D. Instructional Evaluation	
1. Assessing student performance: skill	4.35
2. Assessing student performance: knowledge	4.26
3. Assessing student performance: attitude	4.12
4. Evaluating your instructional performance	4.08
E. Instructional Management	
1. Managing your budget (time & resources)	4.25
2. Providing for the first aid needs of students	4.21
3. Assisting students in developing self-discipline	4.17
4. Arranging for improvement of your vocational facilities	4.07
F. School-Community Relations	
1. Cooperating with members of the community	4.22
2. Obtaining feedback about your vocational program	4.21
3. Cooperating with state and local government educators	4.15
G. Professional Role and Development	
1. Keeping up-to-date professionally	4.49
2. Serving your teaching profession	4.36
3. Serving the school and community	4.32
4. Developing an active personal philosophy of education	4.15
H. Coordination of Industrial Attachment Education (IAE)	
1. Evaluating the students' on-the-job performance	4.23
2. Securing training stations for your IAE program	4.14
3. Managing the attendance and behavior of students on IAE program	4.14
4. Establishing guidelines for your IAE program	4.07
I. Agricultural Extension Philosophy, Organization & Administration	
1. Identifying the farmer/community needs	4.46
2. Evaluating results of programs	4.43
3. Planning programs to meet specific needs	4.34
4. Guiding students on the role and functions of Extension Agents (Agricultural Assistants)	4.35
J. Communications	
1. Using visual aids in Extension	4.27
2. Conducting farm and home visits	4.25
3. Guiding students on methods and processes of communication	4.09
4. Writing technical reports and newsletters	4.09

Recommendations

The following recommendations are made as a result of this study:

1. All the 113 competencies included in the study should be incorporated into the educational curriculum for training graduate agriculture teachers. Special emphasis however should be placed on the 76 items rated above 4.0 or considered to be very important.

2. Each state agricultural college should commence a regular inservice program to update experienced teachers or train the inexperienced ones. The priority competency list for inservice workshop training in Table 1 could serve as a guide.

3. Since the services of the National Youth Service Corps has become normalized in the colleges, measures should be taken to ensure that these temporary teachers are properly oriented to teach. A one week special teaching workshop should be organized for them. Content of the workshop could comprise basic competencies needed by beginning teachers. These include developing a lesson plan, select student instructional materials, direct student laboratory experience, introduce a lesson, summarize a lesson, and assess student performance in knowledge and skills.

4. A consortium of the experienced teachers in the 14 colleges of agriculture, teacher educators, administrators, innovative farmers, and graduates of the colleges should be formed to develop a competency based education program for the colleges.

Implications

Three implications can be drawn from this study:

1. The study has great relevance for the development of agricultural teacher education, improvement of education in the colleges of agriculture of northern states of Nigeria, and Nigeria as a whole. Institutions training agricultural teachers should find the identified competencies useful in preparing preservice curricula for their students.

2. For any agricultural college interested in conducting inservice workshop training to improve the pedagogical skills of their teachers, this study provides a wide range of topics that can be used.

3. The findings of the study can also be used as a foundation for competency based education programs--not only in the colleges of agriculture, but also in other technical and vocational institutions in Nigeria.

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