

TERTIARY EDUCATION FOR MID-CAREER LEVEL EXTENSION PERSONNEL: GHANA CASE STUDY

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Abstract

What can you show employees if you can't show them the money? The answer sounds almost simple-minded: Improved job performance and satisfaction. The poor performance of African national extension systems is often linked to the low educational level and dwindling motivational levels of most frontline extension personnel. In reaction to this situation, an university educational program was developed in Ghana with an innovative curriculum including supervised practical field experience. All levels of mid-career level extension personnel can apply to the program and 76 of these non-traditional students had graduated from the program with a B.Sc. degree in Agriculture Extension at the time of this study.

Results of a national survey of graduates from this academic program indicate that improved educational opportunities for experienced extension staff results in direct benefits for the students themselves as well as for the national extension service, the farmers and even the university lecturers. Graduates of the program reported increased levels of confidence and competency in their jobs as a result of the B.Sc. degree program. Supervisors of the graduates reported an improvement of total work rate, human relations and supervisory skills. Lecturers reported better academic performance over traditional students. And farmer clients cited improved agriculture production as a result of working with the extension graduates.

Introduction

One of the major problems facing agriculture extension services in Sub-Saharan Africa is the low level of staff education as compared with the education of their research counterparts. This lack of proper education and training hampers research-extension linkages and results in a slow or ineffective diffusion of technology to farmers. It is also argued that as extension services move more to incorporate participatory approaches in rural development, most field-level extension personnel do not have sufficient education to benefit from training or in-service activities (Opio-Odongo, 2000). As well, the majority (83%) of these extension professionals in Ghana hold only a certificate in agriculture (see endnote 1), are employed at the technical officer level, and for most, the possibility of continuing their education is practically nonexistent (Muchena, Vodouhe, & Atengdem, 1999).

In response to this need, an innovative program with credit for field activities was created in collaboration between the University of Cape Coast, Ghana (UCC), Ghana Ministry of Food and Agriculture (MOFA), Winrock International, and the Sasakawa Africa Fund for Extension Education (SAFE) in 1993 to allow both university diploma and certificate level MOFA mid-career level extension employees the opportunity to return for their university B.Sc. degree. The main aim of the program is to produce graduates with the requisite human relations, critical thinking and methodological/technical skills to solve farmers' problems with an innovative curriculum including Supervised Enterprise /Experience Projects (SEPs).

The practice of gaining supervised practical experience is nothing new, and in fact ancient references are found to apprenticeships from thousands of years ago. The SEPs are very similar to apprenticeships or internships with exposure to real-world problems and issues in a manner that cannot be offered in a classroom environment. All stakeholders; the students, educational institutions, and beneficiaries; believe that gaining practical work experience during an educational program are beneficial and complement the student's academic work (Coco, 2000).

Some of the benefits for students cited by Coco, 2000 are: a) better understanding of how classroom concepts relate to practical application, b) improved knowledge of industry as it relates to career paths, c) definition of career ambitions, d) reduced shock when entering the workplace, and e) possibility of faster advancement than non-interns (non-SEPs). In addition, educational training for mid-career level professionals provided by the employer could be expected to result in outcomes such as pay increases, benefits, job security, job satisfaction, and employer loyalty (Powers, 2000). In work-related education or learning, an employee should improve in three areas: cognitions (such as strategies for problem-solving), technical skills (such as proposal writing) and attitudes resulting from improved work performance (Kraiger, Ford & Salas, 1993).

An internal and external evaluation of the program emphasized issues of curriculum delivery and assessment, the Supervised Enterprise/Experience projects (SEPs) and sustainability of the program (Muchena, Vodouhe, & Atengdem, 1999). However, the impact of the program on academic and job performance, job satisfaction, benefits and employment opportunities for the graduates has not yet been evaluated.

Purpose of the Paper

This paper describes the role and benefits of this unique B.Sc. program and reports the results of a national survey of all stakeholders. It also presents the results of a quantitative and qualitative study that assessed the impact of the UCC program on the academic and job performance, job satisfaction and opportunities of graduates of the program. As well, this case study serves to document the influences of tertiary education, with an innovative field-oriented curriculum, on national agriculture extension services.

Methods and Data Sources

Since the inception of the B.Sc. Agricultural Extension programme at UCC in 1993 until February 2000 when the study was undertaken, 76 mid-career level extension professionals graduated and were included in this study. Twenty five more completed their programme in June 2000. Fifty-two and 24 more mid-career students will complete their programme June 2001 and June 2002, respectively.

Eleven lecturers/SEPs coordinators of graduates during their training on campus, 26 immediate MOFA extension supervisors of graduates in the field, and 50 of the 76 graduates (65.7%) responded to the survey. Of the student graduate respondents, 16% were female and 84% were male. Their ages ranged from 31 to 54 years and only 3 are single. The MOFA supervisors involved in the study have worked an average of 13 years with the Ghana government and 22 of the 26 respondents are male. All MOFA supervisors have a B.Sc. degree and one has a M.Sc. degree. Each MOFA supervisor managed 1-2 of the students.

Data were collected utilizing survey questionnaires, brainstorming sessions, and focus group discussions. Brainstorming session was conducted among the lecturers/SEPs coordinators at UCC to generate impact indicators for the survey applied to graduates of the program and to evaluate the performance of mid-career level students. Subsequently, participatory focus group discussions were held with six of the B.Sc. graduates to elaborate on the survey answers. Secondary data were collected from the Public Relation Department of UCC, Ghana. Fifteen farmers who work with the graduates were also interviewed.

Results and Conclusions

Academic and Job Performance of Graduates

According to the UCC lecturers, the performance of extension (ext.) graduates during their educational program was very high as compared to traditional (trad.) students who took similar courses. Lecturers indicated that extension students were very enthusiastic and provided real field problems to the classroom environment during their education in contrast to the traditional students. However, the lecturers commented on the weak background in sciences, the English language and also mathematical skills of the extension students. The overall academic performance of the extension graduates was good, as can be seen in Table 1 on the following page. Of the total 76 extension graduates, 15 students (or 20%) had first class honors in comparison with 8% of the traditional students. And only 3% of the extension students graduated at the 3rd class level, while 12.5% of the traditional students graduated at this level during the same time period. The best overall student at UCC in the

1999 graduation class came from this program. Given the opportunity and the right curriculum, mid-career level extension personnel can also excel academically.

Table 1. Demographics and Division of B.Sc. degrees for B.Sc. Extension Graduates.

Year	Gender	First Class Level		2 nd Class Upper Level		2 nd Class Lower Level		3 rd Class Level	
		Ext.	Trad.	Ext.	Trad.	Ext.	Trad.	Ext.	Trad.
1996	Male	6	3	8	11	4	7	1	3
	Female	1	0	3	7	1	1	0	1
1998	Male	5	5	14	32	4	24	0	10
	Female	1	2	3	6	0	8	0	0
1999	Male	1	4	9	23	4	21	2	9
	Female	1	1	4	2	4	4	0	0
TOTALS		15	15	41	81	17	65	3	23

Source: University of Cape Coast 27th, 29th and 30th Congregation Programs, Public Relations Office, Cape Coast, Ghana.

Job Performance Competencies

The analysis of responses of 32 pre and post job competencies is presented in Table 2. The pre-training extension related competencies means (M) ranged from 1.34 for use of computers to 3.38 for growing of crops and vegetables that is poor to fair. However, post-training job performance competencies means rated by graduates ranged from 3.27 to 4.75, which is fair to very good. Areas mentioned included communication skills, writing of extension reports, organization of farmers, development of extension training materials, critical analyses of agricultural issues, management and administration and systems approach to problem solving and participatory program development.

The paired t-test analysis set at 0.05 indicated highly significant differences between pre and post training job performance competencies in all categories for the graduates. This shows that the graduates acquired major competencies from the program.

Supervisors' ratings of post training job performance was very high (3.15 to 4.27) and confirmed the post training performance competencies rating of graduates. However, the independent t – test analysis set at 0.05 showed significant differences in the some of post training performance ratings of graduates and supervisors. These include program planning, communication with farmers, setting up of demonstrations, and evaluation. In all cases, the graduates' ratings were high as compared to that of the supervisors, but both cases were above average.

During the brainstorming sessions, the graduates reported that they increased their level of confidence and articulation in their job as a result of the program. Most of them are now more skilled and can write project proposals for local and regional agricultural development projects. Supervisors also reported that the total work rate of graduates (96.2%), human relations (82.3%) and supervisory skills of were very good.

Farmers interviewed were full of praise for the graduates of the B.Sc. program. Some enumerated the benefits they have acquired through their association with the graduates, including setting up of pilot income-generating projects in beekeeping, snail production and poultry production. Farmers also cited increased productivity of crop and livestock through acceptance of technologies transferred to them by the graduates during and after the SEPs.

Table 2. Statistical Results of Selected Job Performance Competency Ratings

Competency	Graduates' Pre-training (N=50)		Graduates' Post -training (N=50)		T-value graduate post-training	T-Prob. of pre- and post-training	Supervisors (S) N = 29		T-values of S and graduate post-training	T-prob. of S and graduate post-training
	M	S.d	M	S.d.			M	S.d.		
Planning Extension Programs	2.65	0.56	4.47	0.54	20.02	0.00*	4.13	0.46	2.48	0.02*
Working with Farmer groups	2.69	0.79	4.26	0.57	14.94	0.00*	4.00	0.53	1.85	0.06
Communication	3.06	0.73	4.75	0.43	15.06	0.00*	4.40	0.59	2.70	0.01*
Demonstrations	3.28	0.73	4.45	0.67	8.63	0.00*	4.13	0.54	1.96	0.05*
Group discussions	2.79	0.65	4.58	0.61	15.06	0.00*	4.29	0.55	1.68	0.09
Audio visual	2.04	0.77	3.91	0.74	13.24	0.00*	3.75	0.96	0.76	0.45
Farm and Home visits	2.89	0.85	4.43	0.61	11.31	0.00*	4.05	0.75	1.99	0.05*
Teaching materials	1.78	0.75	4.36	0.67	19.85	0.00*	4.09	0.68	1.63	0.10
Evaluation/ Monitoring	2.13	0.77	4.56	0.54	19.79	0.00*	3.80	0.52	5.24	0.00*
Report writing	2.76	0.78	4.65	0.52	16.50	0.00*	4.00	0.61	4.51	0.00*
Developing linkages	2.14	0.85	4.35	0.66	13.78	0.00*	3.83	0.70	3.06	0.00*
Marketing	2.48	0.78	3.88	0.83	10.87	0.00*	3.60	0.68	1.38	0.17
Gender related projects	2.41	0.85	4.02	0.88	10.25	0.00*	4.05	0.77	0.22	0.82
Critical analysis	1.93	0.72	4.22	0.69	16.81	0.00*	3.95	0.70	1.54	0.12
Problem solving	1.91	0.77	4.40	0.57	18.36	0.00*	4.08	0.73	1.97	0.05*
Management /Admin.	2.37	0.86	4.31	0.58	13.45	0.00*	4.04	0.56	1.82	0.07

Means (M) computed from: 1= very poor, 2= poor, 3 = fair, 4 = good, and 5= very good.

* T-test is significant (p = 0.05)

Job Satisfaction and Opportunities

All graduates were guaranteed to maintain their previous employment with MOFA after graduation. However, many B.Sc. graduates have obtained higher positions within MOFA as a result of their higher education. With exception of only one graduate who had re-entry problem, the others indicated they were fully welcomed back and were accorded the expected recognition and respect by their bosses, peers and clients (farmers).

Notwithstanding, 60% of graduate respondents indicated they are very satisfied with their current job placement of MOFA, but many feel that there is a need to adjust the salary scale of technical officers holding a B.Sc. degree. This could be due to civil service bureaucracy that did not allow trainees to be automatically promoted after obtaining their degrees. There has been an upward increase in salaries after the B.Sc. program, although this may be a result of high inflationary trends in Ghana and normal salary increases over the period.

Eight graduates have left MOFA to join NGOs who often offer better salaries and working conditions though MOFA views this as a positive indication that all agriculture in the country will improve as a result of this program. The B.Sc. extension program has enabled 11 of the 76 graduates of UCC program to pursue a M.Sc. degree at universities in Ghana and abroad.

Educational Importance

This innovative curriculum has allowed both diploma and certificate level students to pursue a university B. Sc. Degree and resulted in opportunities for M.Sc. programs also. Until the development of this UCC program, Ghanaian certificate level holders would not have had the option to return to the university for a B.Sc. degree. Not only have the certificate level students done very well in the B.Sc. program but also in many cases they have out performed the traditional university students.

The impact of this educational program suggests that a combination of conventional and innovative practical field experiences will lead to high job performance of mid-career level professionals of agricultural extension institutions. A critical component to the innovative curriculum is the SEPs activity as it builds confidence and skills in participatory community activities, planning of community oriented development projects, and collaborative approaches to funding of community projects. As expected, skills gained during the supervised practical experience enhanced the academic program and performance of the students.

In addition, the lecturers of UCC reported many benefits to their own professional position as working with these non-traditional students led to many unexpected benefits. These included: appreciation and exposure to the importance of extension education in agriculture production courses; interaction with students who have field experience; experience of real field situations through supervising SEPs projects; gained new ideas from the students; better exposure to the client groups of the university (MOFA and farmers); improved application of research findings to field situations and opened new areas for university research; improved interaction with colleagues from other university departments; strengthened outreach

program; adaptation of research and teaching approach to different group of students leading to a more diversified mode of delivery; and improved field experience.

In conclusion, collaboration among universities and donor agencies can lead to development of a responsive curriculum that will be beneficial to all stakeholders, including national extension services and farming communities.

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ⁱ**Certificate level education in Ghana is generally equivalent to a high school diploma but with 13 years of schooling. A Diploma level education is generally equivalent to an A.A. degree from an U.S. Junior College.**