

Agricultural Education in a Cross-National
Context: Problem Solving Among Nigerian Students

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In September 1977 the Nigerian Manpower Project was inaugurated as the first intergovernmental placement of large numbers of foreign students into vocational programs at United States' community colleges. This placement was completed through the United States Agency for International Development. The project began with the placement of 489 Nigerian students into 68 community colleges, proprietary schools, and state technical institutes in 30 states and the District of Columbia (Jacobsen, 1979). Other contingents of Nigerian trainees arrived in January 1978, August 1978, and August 1979. They were also enrolled in two-year vocational programs in agriculture, construction, land surveying, electro-mechanics, and paramedical sciences.

This article reports one of the major observations from an evaluation of the Nigerian Manpower Project at an Illinois community college where 39 Nigerian students were studying agricultural mechanics. From August 1979 to June 1980, the author collected and analyzed data as a participant observer at the school. The participant observation approach and techniques of appropriating data have been described in an earlier issue of the Journal of the AATEA (Peuse, 1981). A secondary purpose of this study was to illustrate an application of participant observation in agricultural education research.

The Research Question

Five general questions were formulated during the pre-field stage of the study. The question for consideration was: has the Nigerian Manpower Project altered the content or delivery of the agricultural mechanics program? If it has, in what ways and for what reason?

Collection and Analysis of Data

The researcher kept a daily log of statements made by various persons including instructors, American and Nigerian students, school administrators and staff, off-campus employers, and co-workers. Descriptions were made of interactions in various settings such as the classroom and shop, at off-campus employment sites, and in different social situations. Notes were ritually recorded, sometimes in the presence of subjects and, at other times, discreetly written in

a private office, empty classrooms, or in the library immediately after listening to a conversation or observing an event. Recorded information was collected in formal meetings, informal gatherings, and casual encounters before, during, and after school and business hours. At the completion of field work, the author had produced 700 pages of observational notes in nine stenographer notebooks.

Four months after commencement of the research, the existing 400 pages of chronological notes were reviewed in terms of predominant topics of conversation. For example, faculty frequently raised the issue of Nigerian students' understanding of subject matter and their attitudes toward the study and practice of agricultural mechanics. The Nigerians often commented on insufficient instructional assistance afforded them by faculty. Closer analysis of the record suggested that Kazanas' Affective Work Competencies Inventory (1977) would be useful in organizing the data. Statements and descriptions of interactions between Americans and Nigerians were transferred onto 3 x 5 cards and filed into the respective affective work categories described by Kazanas as valued behaviors in vocational and technical occupations.

What evolved from this process of organizing the data into more refined units of analysis from data samples which numbered 450 was a more focused attention to certain aspects of Nigerian behavior that conflicted with American expectations. Specifically, the frequency and poignancy of the evidence suggested that the Americans and Nigerians valued independent problem solving behavior differently. Two data samples follow:

Two Nigerians puzzled over the manual and a transmission. "I think it's a synchromesh," proposed one. "I'm going to ask," the other announced. "No! He said we were to give him the answer tomorrow," was the reply. "Nonsense. What's he here for? Why is he a teacher if he won't answer our questions?" The other countered as he departed in search of the instructor.

The teacher continued, "The American kid will kind of wait at his station until you pass him, unless it's a big problem. But the Nigerians are always underfoot. When I refuse to help them every step of the way, they get angry."

These and many other episodic accounts revealed differences between instructors' preference for using a problem-posing approach in delivering subject matter and the Nigerians' orientation of relying on teachers to promptly provide answers to posed classroom and shop problems.

At this juncture, the collection and analysis of recorded and incoming data was supplemented by a review of cultural and psychological literature to better understand the social phenomenon in the research situation. Studies by Ottenberg & Ottenberg (1964) con-

firmed that the Nigerian school system does little to promote independent problem solving. Freire (1970) has generalized that most teacher-student relationships in traditional societies are ones in which the teacher, as knowledge authority, supplies the student with information, and students, in turn, "are not called upon to know, but to memorize the contents narrated by the teachers." (p. 68)

Data gathered on Nigerian students' behavior also bore striking resemblance to those presented by Perry (1970) in his study of the intellectual and affective development of American students. His research identified several stages of growth as students moved from a heavy reliance on authority for knowledge to more self-reliant judgement making. Perry's data samples of students at the lowest level of self-confidence mirrored those collected by the author, thereby suggesting that the Nigerians might also be operating on the same level where the teacher is seen as the authority and mediator of knowledge. For instance, Perry (1970) presents the testimony of a student trying to cope with the demands of college learning which was forcing independent discovery and judgement:

I'm not a great one for the learning methods here. I tend to prefer the high school method of learning stuff. It's thrown at you here where you're left to copy too much on your own. (p. 184)

Similarly, the Nigerians would relate their struggle in the agricultural mechanics program. One student pleaded:

I don't like your way. Yesterday I asked a teacher to help me, and he just walked away. He's not doing his job. I mean, he knew what was wrong with my engine but he refused to tell me.

Other students likewise expressed frustration with the instructional methods and communicated a sense of betrayal in that teachers were withholding knowledge. One student submitted, "They like to see us suffer, even though they know the answers." Instructors equally reported student charges that faculty were not performing their teaching duties.

Nevertheless, the data showed that most agricultural instructors continued to pursue their general problem-posing approach. A mechanics teacher summarized his experiences in teaching the Nigerian students:

I've had native students who've had the same difficulties. But the Nigerians seem to universally lack this ability of problem solving. They are great imitators and can repeat identical problems from memory. But ask them to do variations of a problem or project on their own and they are lost...I know this must be difficult for them, and I try to spend as much time individually with them as possible. But it gets kind of tough with so many in one class.

In short, the Nigerian Manpower Project did not alter the problem-posing standards in the delivery of subject matter in the agricultural mechanics department. But conducting the program in such a manner was not without difficulties, for Nigerian student reliance on teachers as knowledge authorities conflicted with American faculty preference for being problem-posers and encouraging students toward independent problem solving.

Implications for Agricultural Education

The major implication for agricultural education programs enrolling foreign students is that the schooling traditions of their country must be taken into account. Foreign students, such as those in the Nigerian Manpower Project, will need assistance in adjusting their dependent relationship on agricultural instructors as mediators of knowledge. At the same time, faculty must be prepared for increased demands of individual assistance from the students.

One way of assisting both foreign students and faculty might be to conduct an orientation course on the differences between the authority-oriented/rote learning tradition in the students' home country and the general problem-posing problem-solving tradition in the United States' agricultural education program. The purpose would be to help the students become formally aware of the different teacher-pupil relationship in United States' vocational classrooms and laboratories. An examination of student roles in school (guided observation of American student behavior in shop areas) and exercises that challenge students' reliance on the teacher (role-playing exercises where problem-posing instruction is simulated) might help the students realize that they will be expected to assume a more active part in the learning process and not the passive one to which they are more accustomed.

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