

A STUDY OF THE VOCATIONAL AGRICULTURE CURRICULUM  
FOR HIGH SCHOOLS IN THE STATE OF OKLAHOMA,  
U.S.A., WITH IMPLICATIONS FOR SECONDARY  
SCHOOLS IN NIGERIA

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DEDICATION

Dedicated to my children.  
May they become so inspired  
as to emulate.

## ACKNOWLEDGMENTS

"Give honour, to whom honour is due."

William Shakespeare

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"No race can prosper till it learns that there is as much dignity in tilling a field as in writing a poem."  
Booker T. Washington

"Unless the student right from the moment he is admitted into the . . . school, is taught to use not only his head but also his hands and is encouraged not to

despise manual labor, the present craze for white-collar jobs by our young people would lead to disaster sooner or later."

Chief A. Y. Eke

"Vocational education develops the mind to imagine as well as provides the skills to do. The mind is a terrible thing to waste."

Basiru M. Gwarzo

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## CHAPTER I

### INTRODUCTION

Agriculture has been said to be the backbone as well as the mainstay of any country directly or indirectly. The highly industrialized and the oil-rich countries are no exception. For, while it is agreed that the revenue sources of such countries are non-agricultural, yet agriculture keeps these countries going. But this broad and general statement being used metaphorically has been so deep rooted as well as accepted unanimously world wide that it becomes needless to keep saying it or be overtly bothered about it every time. Analogically, it is just like the saying and the staunch validated belief that there is only one God; people are forever conscious of this abstract but proven fact such that they do not have to keep saying it or bothering outwardly about it except on certain occasions.

But under the present situations of increased industries and machines, there is an apparent shift of magnitude from agriculture to oil. The 1973-74 oil embargo politically imposed by the traditional oil countries confirms the magnitude of oil and its apparent dominance over agriculture. The oil restriction induced for the first time in world's history an oil hunger which has been conventionally termed "energy crisis." The energy crisis sets a state of energy scarcity so that energy husbandry had to be proclaimed for the first time ever in the history of the world. However, the shift of magnitude from agriculture

to oil can never be real and perpetual, but rather an ephemeral as well as an obscene lip service. The shift also does not auger very well to the ever growing world's population. Again oil, unlike agriculture, is an exhaustible, depletable, and non-renewable resource.

Indicative of the false magnitude of oil is the position of Saudi Arabia, which is the world's largest oil producing country. She, therefore, holds much of the world's oil riches. But despite her vast oil reserves and riches, Saudi Arabia is a typical example of a country categorized as a developing or under-developed country. Had her resultant riches from oil resources been agrarian, her outlook would have been totally different both nationally and internationally. She should have conformed to the saying "Wealth is Power and Power is Wealth." Consequently, she also should have been either the single most world power or at least be among the present day world powers. But nay, Saudi Arabia is way down the ladder.

On the other hand, the United States of America, with limited or diminishing oil resources but with highly developed agrarian resources and achievements, is at the top of the ladder or mountain peak. With this strategic position in agriculture, the United States oversees the whole world including, of course, the oil rich countries. This clearly confirms the age-long and deep-rooted prevailing agricultural predominance over oil or any other resource. Hence, the apparent magnitude now being meted out to oil is nothing but a sheer lip service, and it is not everlasting. Oil, besides being exhaustible and non-renewable, can also be possibly replaced as a source of energy. As matter of fact, strenuous efforts are underway to find alternative sources of power in view of the rocketing oil prices and its politickings. But agriculture is renewable

as well as non-depletable and cannot be substituted as a natural resource for food (fiber and red meat) production on which the peoples of the world depend for their survival and coexistence. In fact, there are growing concerns and sentiments that a famine is threatening to strike the world. This is because the rate of food production is falling below the rate of population growth. Thus, Malthus' theory which says that population increases at a geometrical ratio and food supply increases arithmetically starts to breed true as well as become practically real.

The food situation is aggravated by the apparently general neglect of agriculture because of the oil boom with its tantalizing bounties. Another reason for the sad and pessimistic food situation is the nonchalant attitude, or perhaps more acceptable, the inability of the so-called developing countries to develop and thereby utilize their vast agrarian resources. The development of these untapped agricultural resources will undoubtedly step up and heighten food production so as to sustain the rising world population. It is an unfortunate and an inconvenient anomaly or relationship that while longevity advances due to improved health conditions, food production goes down. The ideal and desired situation is that food production should either be at par with population or the former be somehow ahead of the latter. The author is purposefully conducting this study so as to come up with a possible approach or instrument with which his country can develop its agriculture. It is the firm belief of the author that if the proposed approach or instrument is appropriately applied, the chance of achieving or restoring the lost ideal situation is enhanced. Furthermore, if most of the other developing countries will follow suit and likewise take similar

action or other effective measures, then the forecasted world famine will become obviated. Again, Malthus' pessimistic theory will become invalidated.

It is very fortunate that Nigeria has not become misled by the current but transient boom. Her leadership realized that oil is not to be reckoned in the same manner and magnitude with which agriculture has been reckoned. The relative importance given to oil does not supersede or dominate agriculture. Nigeria is the seventh world's oil producer. West Africa (1) reports "known oil reserves could support 25 years of production . . . , while new discoveries are adding to these reserves regularly" (pp. 257-258). According to the latest information, the current daily production of oil is estimated at 2.4 million barrels.

Prior to the oil discovery, the economy had been dominated by agriculture. It then accounted for more than half the annual national income as well as the government revenue as reported in a Nigerian official leaflet (2). But with the turning point in oil, the age-long magnitude and dominance of agriculture start to shake. The former is trying to overshadow the latter. This is, of course, due to the world's ephemeral lip service to oil and a superficial shift in recognizing the magnitude and importance of agriculture in the long term development of every nation. However, Nigeria, as mentioned earlier, has not become misguided by the oil boom. Therefore, she has maintained the status quo between agriculture and oil as clarified in the following paragraphs. Admittedly, oil is now Nigeria's biggest revenue source, especially because of the drought which has plagued and paralyzed Nigerian agriculture for the past five years in succession. Consequently, West Africa (3) reported that in 1973 oil accounted for 83 percent of the total value



of Nigerian exports even though there was an increase of almost 100 million naira (N) in the value of the traditional exports. These traditional exports are cocoa, rubber, palm produce, ground nuts, and cotton. The last two were hard hit most by the recent drought. But according to the latest release of West Africa (4) "Nigeria earns a revenue of 18 million naira per day from crude oil exports . . . . oil receipts now account for more than 90 percent of government revenue" (p. 1537). Notwithstanding the substantial economic contribution from oil, Nigeria has not actually withdrawn or swayed any prominence from agriculture for the following witty, genuine considerations:

1. Oil earnings dry up causing a deficit.
2. Oil is an exhaustible and non-renewable resource unlike agriculture.
3. Oil is a wasting asset and therefore not dependable.
4. Demand for oil may drop or disappear eventually since the current raging oil crisis has induced endeavors to find and explore possible alternatives (substitutes) to oil as sources of energy.

The Nigerian Head of State, General Yakubu Gowon, clearly ratified the country's attitude and viewpoint on oil in his budget statement for the new fiscal year 1974-1975. Gowon (3) said, "In spite of the rapid rise in oil revenues, Nigeria is still not yet a rich country" (p. 393). He supported his statement by emphasizing that oil wealth offered no protection against inflation. According to him, inflation cannot be effectively fought unless there is a substantial increase in production of food locally. As such, he has promised substantial federal help for agricultural programs. Therefore, in Nigeria, oil revenues are used to develop agriculture. This is to help ease or counteract the deficit

and the burden of inflation brought about by the oil boom. Thus, in Nigeria, the temporal domination and supremacy of agriculture remain intact, despite her oil riches.

The United States Chief Economist, Don Pearlberg, was quoted by Malloy (5) to have said in a conference on Universal Famine that the threat of world famine had been raised twice since World War II. In view of the deteriorating food situation, Pearlberg (5) irrevocably concedes, "Those of us who are pessimistic about the ability of the world to feed its people have more persuasive evidence to lay before us than in many years" (p. 2).

The present world food deficit is somehow proving Malthus' dogma which has forecasted food shortage due to rapid population growth which creates pressure on the land. It is earlier mentioned that due to improved health conditions, longevity advances and birth rate increases as well. Thus, there will be more and more lives (souls) to live in the world. In a strict sense each of these growing lives needs to make use of the "land" in the world. But, land is very much constrained in that it neither expands nor increases. Therefore, unless intensive land management coupled with extensive agricultural development is practiced there will not be adequate or nutritious food for the ever-expanding world's population.

The key to the world's food problem lies in the realm of the so-called developing or poor countries. Though these countries contain the balance of the world's agricultural potentialities to be tapped, yet the food shortage is much more serious in them than elsewhere. The present strenuous and unremitting efforts as well as strategies are all geared towards salvaging these countries from starvation and eventual

destruction. If agricultural development could take proper shape in the developing countries, the current food deficit might have a turning point and a dramatic episode too. Don Pearlberg (5) implied this point as one of the actions he suggested to be done in order to combat the food crisis. He said that the poor countries must bring their own food yields up to levels approaching those of America. Food yields cannot be raised by miracles or anecdotes but practical agrarian development.

In a supplement from Development Forum (6), P. Collins, a participant of the World Food Conference in Rome (November 5-16, 1974), has been quoted as saying:

. . . in the less developed countries, although a large part of their population is engaged in agriculture, production is often too low to satisfy even the simple, and generally nutritionally inadequate diet imposed by their general poverty, the more so in view of the post war upsurge in the growth of population (p. 1).

The author strongly and irrevocably feels that agrarian development rather than birth control is the best possible solution to the apparent threat of world famine. Population outgrowth is usually checked by natural disasters and wars. After all, birth control is not still universally accepted or recognized because of some humane and moral considerations as well as some skepticisms about it. Indirectly hinting at these reservations on birth control, S. A. Jabati, Chairman of the World Food Conference (6) said:

If they [developing countries] are going to have more children they should produce more food. It is very difficult to tell these people not to produce children, but if they are going to produce more children, then food production should exceed the rate of population increase (p. 3).

To support further the promise and magnitude of agrarian development, Development Forum (6) reports this quotation in its supplement:

In the Far East there was the third successive large increase in food production since 1965-66. This . . . suggests what can be done when governments are firmly committed to agricultural development (p. 1).

The basic approaches as viewed by the author to setting a solid foundation for agricultural development are none better than these:

- (1) Vocational-Technical Education, (2) Mechanization, (3) Research, and
- (4) Extension.

#### Vocational-Technical Education

Vocational-technical education provides a practical education for adult farmers and prospective young farmers. Adult farmers, who have not had the opportunity to attend formal schools during their cream years and cannot do so thereafter owing to family obligatory commitments, have the opportunity to improve their well being and agricultural production under the vocational-technical education scheme. The scheme is a valuable salvage to adult farmers. They can learn ways and means of raising their production with minimum costs and without any hazards to their farms. Demonstrations, discussions, farm visits, or field trips are the methods commonly employed in teaching the adult farmers (7).

As for the prospective young farmers, they are right in their tender or formative school years orientated to agriculture and improved methods of farming. They are prepared to become successful future farmers. Practical work at the secondary level is accomplished through directed projects and supervised farming programs (7). The directed projects are carried out by students in the school farms with most of the direction given by agricultural teachers. The supervised farming, on the other hand, enables the student to participate more extensively in the conduct

of the farming enterprise he has chosen. As such, the planning and decision making activities are largely undertaken by the students with, of course, maximum guidance but minimum direction from the teachers.

This aspect of education is the most important as well as the underlying factor not only to agricultural development but also to other developments. It is the fundamental factor to development and progress. It is also the only salvation to human freedom and development. Without it, the other possible approaches to development may not succeed. Some authorities are saying that education is life itself, not preparing for life. As a matter of fact, it is lack of education that retards agrarian development in the developing countries. It is with this view, the author conducts this study so as to come up with a curriculum in vocational education for use initially in Nigerian secondary schools so as to orientate or expose students in these schools to agriculture. In an article on planning literacy programs, a Nigerian professor, A. B. Fafunwa of the University of Ife (8) states:

Productivity also depends heavily on the attitudes, knowledge, and skills of people which in term reflect the education, training, and complex organisations which modern technology requires. It is my view that no country can rise above the level of its illiterate population especially if the majority of the population is illiterate. Until we can mobilize the whole people, we in Nigeria cannot claim to be living in a technological age; we are at the level of Headpan Technology (p. 5).

Vocational education is primarily concerned with, as well as geared to, human resources development which is essential for developing the world's natural resources. Human resources are perishable and their potential deteriorates, declines, and is decapacitated in the lapse of time. But minerals, if undeveloped, wait indefinitely without deterioration. Again, machines may obsolesce, but if protected from the elements

they do not physically deteriorate from disuse. Vocational education develops human resources in the following ways:

1. Its courses and curricula are designed on the actual needs of people rather than on predetermined or presupposed needs. Thus, people can have a purposeful as well as gainful life.

2. It provides practical experiences to adoptively conform to Dewey's principle--"Learning by Doing"--in other words doing to learn. Education, for example, in agriculture at whatever level is meaningless without farm practice or field experience. The acquisition of effective skills and abilities for certain agricultural activities is only possible through field exercise or farm experience programs associated with theoretical instruction.

3. It caters for both sexes and all kinds of persons: (1) the normal, (2) the gifted, and (3) the handicapped.

Vocational agriculture is a specific type of vocational education. It is concerned with the training of present and prospective farmers for proficiency in farming. The role of vocational agriculture for agrarian development and reforms, therefore, is clear and does not need to be emphasized. As such, while agricultural development is the key solution to the world's food problems, vocational agriculture (education) is, by the same token, the key solution to agrarian development. The author hereby repeats his expressed opinions that if agricultural development could be properly shaped in the developing countries which abound in many and varied but untapped resources, the current anxieties about mass starvation might have a new turning point as well as a dramatic episode. The author's other opinion held in high esteem is that agrarian development rather than birth control is the best solution to world famine.

### Mechanization

One of the salient reasons for the very low agricultural production from large acres of land in the developing countries is the slow traditional farming methods and tools being used. These greatly counteract if not nullify the enormous and strong labor force engaged in agriculture. In general, the majority of the population in the developing countries is strictly engaged in agriculture. In Nigeria, for example, 85 percent of the population is employed in agriculture, but production is just at the level of subsistence and sometimes it is below that level.

In the developing countries, mechanized agriculture seems unknown or cannot be practiced and handled too. Modern implements and farm machinery are not available to farmers. Most farmers are non-technical or avocational such that they cannot operate and maintain machinery. This is another important segment for the role of vocational-technical education which has been stressed earlier. Lastly, spare parts of implements and machinery are not readily available as they have to be imported. Consequently, a number of machinery may be laying idle awaiting the arrival of these necessary spares. Nevertheless, it is clear that for the development of modern agriculture, even efficient use of the crude traditional implements will not suffice to raise production from subsistence to surplus or complacency.

The impact of non-mechanization in agriculture is further deplorably clarified by one Nigerian agricultural expert, Oyenuga (9):

Of the main afflictions that befall the west African farmer that of using his own unaided energy to produce the nation's food is the worst and most devastating. He depends on his cutlass and hoe for practically all farm operations. Therefore, as long as no other or better equipment than a cutlass, a hoe and an axe, and for no other reward

than merely to keep body and soul together, agricultural production will remain low, and the mass influx of the rural unemployed into the cities will increasingly continue (p. 10).

It has become a matter of expediency and earnest hopes that mechanization of agriculture in the developing countries takes a sound footing. It is hoped that farm machinery such as tractors, harvesters, combines, fertilizer spreaders, and sprayers will eventually be made available along with spares and repair shops to farmers (12). This would simplify labor, accelerate as well as raise production, and finally make farming a recognized occupation. In the United States, a farmer produces four times the production of his counterpart in a developing country, with less hardships and risks. The present non-mechanization makes farming a real drudgery and enhances people, especially young elements, to dread and keep away from it. Unless by sheer miracle, the author thinks that mechanization will take several years to materialize. However, he believes that it can somehow be speeded up by exposing young elements to vocational agriculture in which they learn about farm mechanization besides improved and efficient practices of farming.

Ojo (12) shows in Table I the estimated number of tractors available from 1966 through 1970 as well as the projected number to be available from 1970 through 1998 for African countries. However, it is fair to point out that some form of agricultural mechanization has been going on hitherto in the developing countries. But is just insufficient and inefficient too! In fact, it is considered to be in the infant and experimental stage.



TABLE I  
ESTIMATED NUMBER OF TRACTORS TO BE MANUFACTURED  
FOR AFRICAN COUNTRIES

Period	Number of Tractors
1966-1970	119,000
1970-1976	239,000
1976-1986	641,000
1986-1998	1,468,000

Most African governments have experimented with a number of tractor mechanization schemes and tractor hire services. The former has been generally connected with large scale farming schemes such as state farms, land settlements, etc. But many of these large scale farming schemes have generally failed after a few years or have experienced so many problems that they have been curtailed to the extent that it has been politically possible. Tractor mechanization in Africa has been less successful for a number of reasons (13):

1. The short life of tractors and equipment due to corrosion and poor maintenance and operation
2. Poor management
3. A low degree of utilization
4. Equipment inappropriate for African soils and diverse ecological conditions
5. Problems associated with poor land clearance and size of fields
6. Tractor schemes requiring large amounts of foreign exchange

7. Employment effect of tractor schemes is often ignored.

8. Wrong criteria or approaches (rebates on petrol, subsidized repair centers, etc.) of subsidizing tractor schemes

Despite these problems, tractor mechanization in African countries is promoted and subsidized for the following appealing factors (13) rather than actual performance benefits:

1. Prestige--tractors and mechanized farming are equated with modern farming in developed nations.

2. Inadequate methods of appraising mechanization projects, mainly technical or financial basis rather than national or economic basis

3. Tied-aid policies (strings) of donor nations

4. Alternatives to unresponsive small holders for disgruntled extension staff as a shortcut to the tedious process of helping small farmers improve their farming systems

5. Timeliness--soil conditions allow only a few days between plowing and sowing.

#### Research

Research is an important aspect for agricultural development. It has a two way channel: (1) it provides new findings and information, e.g. new varieties and strains of seeds, new fertilizers, improved management practices and (2) farmers pose their problems or needs to research for solution and scientific examination.

The type of research activities needed in developing countries is not different from that needed in the developed countries. Research activities range from the basic or fundamental to the applied and adaptive. However, more basic or fundamental research needs to be done in

the former countries since research is not well established as yet. Basic research work in crops particularly food grains should include development of new varieties and strains that are high yielding, early maturing, drought resistant, resistant to pests and diseases and of high quality. Basic research is also needed in industrial crops, horticultural crops, livestock, soils and fertilizers, agricultural engineering, plant breeding, and the allied fields of economics.

The goals of agricultural research can be briefly enumerated as follows: (1) provide efficient production, transportation, marketing, distribution, and utilization of farm products for the health and welfare of the people; (2) provide improved and delightful life to the rural people especially as urban people have more opportunities; (3) find high quality seeds; (4) meet farmers' problems; (5) meet emerging problems or phenomenon, e.g. pest, disease, drought, disaster, etc.; (6) organize experiment stations; (7) cooperate with extension personnel.

The provision of funds is one of the serious problems that may or has been impeding both establishment and progress of research. Unfortunately, it is an obvious as well as inevitable fact that research work is not feasible without readily forthcoming funds. Equipment which sometimes is sophisticated must be bought and some buildings must be constructed. In the United States, for example, agricultural research and experiment stations have been substantiated by a congressional act, Hatch Act 1887. Another clear problem which is both discouraging and disheartening about research work is the difficulty in getting farmers to adopt or apply the new ideas and practices. Unless farmers adopt and apply the new ideas and practices, there is no use to keep pouring money into research work. However, this situation largely depends on

the enlightenment or educational level of the people involved as well as an effective extension service organization. Again, education (vocational) has influence on the success of research.

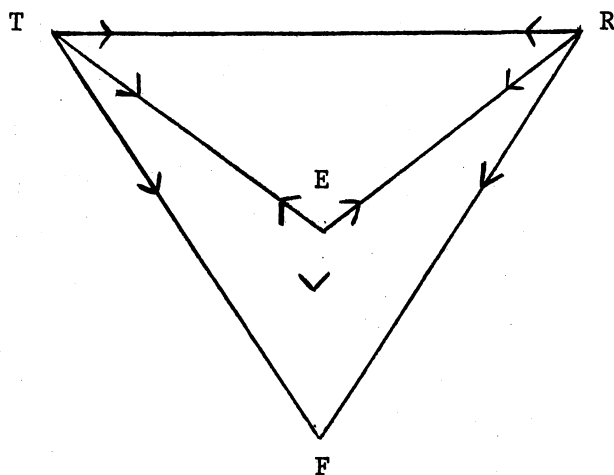
#### Extension

Extension is education by nature. While J. C. Evans (10) defines education as "the process through which a student goes to improve himself" (p. 2), extension does exactly similar function by identifying problems and needs of local people and then help in organizing how to solve the problem or meet the needs. Again Evans (10) states further that if the extension staff in a county or anywhere is going to contribute something educationally to the people, it must have an educational program to fit the needs of the people concerned. However, the author is inclined to regard extension as a function of education and/or extension is the process or medium through which education operates. At any rate, extension work may be broadly divided into two major categories (7): (1) service and (2) education.

The service function includes the distribution of improved varieties and breeds of plants and animals as well as information about new ideas and practices or refinement of traditional methods for farmers and other agricultural workers. The educational function of extension, on the other hand, embraces preparation of prospective extension workers, providing in-service training for extension and other personnel involved in agricultural work to keep abreast with time and finally dissemination of information through the many channels of mass media.

As extension is education and deals with the masses, particularly those at the grass roots, it is doubtless, therefore, that extension

is an ideal approach to human resource development. While education is the basis for extension work, extension is the organized means of medium of reaching people. It both teaches and extends information, be it new ideas or new practices to the rural masses. It also has the formidable task to make the populace adopt the new ideas or practices. This is the principle behind the Smith-Lever Act, 1914, by which Cooperative Extension Service has been enacted in the United States. An interesting and noteworthy feature of extension is that it is closely related to both research and vocational education such that they all become interdependent of one another.



T--Resident teaching (in agriculture)  
 R--Research  
 E--Extension  
 F--Farm families including home makers  
 and other innovators

Source: 11, p. 24.

Figure 1. Relation Between Teaching,  
 Research, and Extension

In fact, extension harmoniously coordinates and integrates the functions of all the three: teaching, research, and extension, in relation to the farmers. This integration and coordination as well as interdependence is best illustrated in the preceding tetrahedron figure as shown on the previous page.

The guerilla freedom fighters mainly in Africa exhibit a widely held witty idealism and sentiment, i.e. liberation from oppression of anykind, does not come from without but certainly from within. These freedom fighters are fighting by themselves for their own freedom since their arch-imperialists refuse granting independence. These colonists have not relied on outside Aladians, myths, or George Washingtons to do the fighting for them. Rather, they have taken the fighting all by themselves using whatever weapons they have and whatever assistance they receive from outside.

Therefore, by the same token and idealism, the liberation from the miseries and poverty of under development largely rests on concerted as well as unremitting efforts from the developing countries. They should organize and tackle their own problems rather than to depend heavily on foreign monies with inevitable strings attached and also some outsiders who invariably come to the developing countries with speculative as well as exploitative ambitions or aspirations. Like the freedom fighters, the developing countries should provide the stamina and initiative, but whenever available, they should avail themselves of any relaxing and bona fide foreign aid: financially, materially, or technically.

In the final analysis, after so much discussion about developing and developed countries, the author thinks it ideal to show a brief comparison between the two. The tabular comparison is adapted from the

article of Professor A. B. Fafunwa (8). There are some illustrative explanations of the developing countries in the appendix. They are adapted from a U.S.A.I.D. publication (14).

<u>Developed Countries</u>	<u>Under-Developed Countries</u>
1. High level economy	1. Low level economy
2. High percentage of literacy: 80-98 percent	2. Low percentage of literacy: 3-50 percent
3. Large percentage of technical labour force, specialists and highly industrialised community efficiency	3. Peasant and agrarian economy inefficiency and poor organization
4. High per capita income	4. Very low per capita income
5. Low mortality rate, preventive health programme	5. High mortality rate, disease, squalor
6. Independent for many years	6. Recently autonomous or still colonial
7. Well-organized and fairly stable political systems	7. Transitional political stage
8. Citizenship, rights, and obligations recognized	8. Transitional stage
9. Education geared to the needs of the people and the country	9. Inherited system from the colonial era with little relevance to the needs of the people and the country or sheer imperviousness to changing times
10. Manufacturers	10. Consumers
11. Masses by and large scientifically oriented, less superstitions and generally efficient	11. Masses largely superstitious, scientifically illiterate and technically inefficient

Source: 8, p. 2.

Figure 2. Comparisons Between Developed and Developing Countries

### Statement of the Problem

Nigeria is among the countries which have been, by comparison, categorized as developing countries. The comparative analysis of the economic and social status of the developed and under developed countries is the criterion used for the categorization. Like most developing countries, therefore, Nigeria's agriculture needs much to be developed. The author mentions earlier that 80 percent of Nigeria's population is engaged in agriculture. In spite of the enormous and strong labor force dedicated to agriculture, production is just at subsistence level, but sometimes it exceeds slightly that level. Nigeria is, however, able to feed and sustain her large population of 56 million people (1963 census) without any food imports. From the 1973 census, the provisional figures released show Nigerian population to be 80 million, i.e. 21 percent of the African population. Also, Nigeria's educated young elements do not like to engage in agriculture.

But in view of the grim as well as pessimistic picture for the sustenance of the world's increasing population, Nigeria should step up food production. This need is not just desired but it is becoming a real necessity. This apparent necessity is emotionally and sentimentally implied by Dr. Henry Kissinger (14):

No tragedy is more wounding than the look of despair in the eyes of a starving child. Today, we must proclaim a bold objective--that within a decade NO CHILD WILL GO TO BED HUNGRY, that no family will fear for its next day's bread, and that no human being's future and capacities will be stunted by malnutrition (p. 1).

To achieve food security so as to meet Dr. Kissinger's expressed emphatic sentiments, the author feels that twice as much food should be produced by the end of the century. This is because the food exporting



countries, which through good fortune plus technology, produce more food than they need and thus are able to export, will simply not be able to meet the incessantly increasing demand.

As were the views of the author expressed earlier, the solution and salvation of the world's food deficit will come by a crash program for the development of the untapped agricultural resources which abound in the realms of the developing countries. An anticipated support for such a program seems assured by the United States President Ford's pledge that the United States was prepared to share the results of its advanced research on food production with developing nations in addition to providing increased technical assistance and financial support for agricultural development and programs to combat malnutrition. For more of such pledges, see Appendix F.

#### Need of the Study

From the author's exposure and appraisals of vocational agriculture the author strongly feels that one of the best and most assuring solutions will be to inductively expose as well as orientate young Nigerians to vocational agriculture. They can, thus, be trained to become proficient farmers. In addition, they can take farming as a sound life time career and profession too. The professionals can continue to propagate vocational agriculture by teaching in institutions and conducting extension services. If this proposition can be achieved, Nigerian agriculture is certain to be revolutionized. In earlier discussions, the author emphasizes that (vocational) education is the basis for human resource development which is precedingly essential for the development and management of natural resources, which, of course,

include agrarian resources.

The only possible way to expose young Nigerians to vocational agriculture is to introduce instruction in vocational agriculture into the secondary schools. In the State of Oklahoma, for example, vocational agriculture has become established in a more effective manner in the high schools following the development and introduction of the Basic Core Curriculum for Vocational Agriculture.

Under the present educational organization and provisions, Nigerian secondary school students are not privileged to study vocational agriculture. It is interesting that most of these students come from rural areas with parental background in agriculture. However, under the present setup, such boys can only learn or start to be exposed to some training in agriculture in the post-secondary school institutions, e.g. schools of agriculture, rural science institutes, etc. These institutions are not adequate enough in numbers to meet the needs of the students.

Phipps (15) defines vocational agriculture thus: ". . . training of present and prospective farmers for proficiency in farming" (p. 26). Vocational agriculture is a component or form of vocational education which Evans (16) defines as ". . . the part of education which makes an individual more employable in one group of occupations than in another" (p. 1). The main goal of vocational education is to prepare or fit persons for gainful employment as well as purposeful life by providing training and retraining for youths and adults which is realistic in the light of actual and anticipated opportunities for employment. The major program objectives for vocational-technical education in agriculture are enumerated by Dr. H. R. Terry (17) as follows:

1. To develop agricultural competencies needed by individuals engaged in or preparing to engage in production agriculture.
2. To develop agricultural competencies needed by individuals engaged in or preparing to engage in agricultural occupations other than production agriculture.
3. To develop an understanding of and appreciation for career opportunities in agriculture and the preparation needed to enter and progress in agricultural occupations.
4. To develop the ability to secure satisfactory placement and to advance in an agricultural occupation through a program of continuing education.
5. To develop those abilities in human relations which are essential in agricultural occupations.
6. To develop the abilities needed to exercise and follow effective leadership in fulfilling occupational, social, and civic responsibilities (p. 1).

These objectives are, by no means, final or exhausted. However, they are examples or representations of sound objectives in vocational agriculture.

The impact of the non-provisions for vocational agriculture (avocational provisions) in the secondary schools is that most boys despise agriculture and consider it a drudgery as well as unprofitable, especially from their observations of farming operations and production with the traditional hoe and cutlass by their parents and other farmers. Also, they are disgusted to pursue or take up agriculture as a business or profession. Rather, they crave for the white-collar jobs which are lucrative as well as comfortable.

In a study on "Factors Affecting Secondary School Agricultural Science Teachers," J. N. Okorie (18) has remarked that much needs to be done to raise the image as well as the status of agriculture in secondary schools. One of his findings is that agriculture does not yet

occupy a significant place in the school curriculum. Most of the teachers involved in the study maintained that agricultural courses should be taught from a vocational point of view. Okorie (19) laments:

Remarkably, the greatest weakness in the school system is the avocational characteristics of the school curriculum. This practice which was inherited from the colonial era is significantly being perpetuated in the school system. Thus, improvements in agriculture will become more visible, when the youths associate the importance of work with their studies (p. 115).

Therefore, the author feels that unless the youngsters not only in Nigeria but also in other developing countries are made to recognize agriculture in the same manner the American youths have done, the future of agriculture will remain dull. Consequently, the present call and outcry to raise agricultural (food) production so as to obviate the imminent world famine will have no repercussions at all.

But some rays of hope for vocational agriculture are evident and seem to prevail in Nigeria. These rays of hope can be visualized and/or deduced in these instances. The Nigerian Federal Commission for Education, Chief A. Y. Eke (20) states:

Unless the student, right from the moment he is admitted into the secondary school, is taught to use not only his head but also his hands and is encouraged not to despise manual labour, the present craze for white-collar jobs by our young people would lead to disaster sooner or later (p. 2).

This disaster is that the army of unemployed secondary school graduates will continue to mount in the towns and cities coupled with the mass exodus of rural people to the urban areas. The other instance of hope is that the Third Development Plan 1970-1974 promises that during the plan period, the federal and state governments will formulate a variety of integrated policy measures concentrated on the following problems in

## agriculture (21):

1. Improved production techniques
2. National seed multiplication schemes which will initially handle sorghum, maize, rice, pulses and cassava
3. Improve storage:
  - a. At farm level using low-cost type of silos and air tight drums
  - b. At collecting centres in small towns and large rural depots
4. Organised marketing--the marketing of food crops at present gives neither a fair return to the producer nor a fair price to the consumer. Considerable price variations occur within and between seasons. This does not make farming an attractive business. Farmers who regard farming as full-time occupation continue to do so mainly because there are few alternative avenues for them to make a living. Those who can find more profitable outlets either get out of food farming or relegate it to a secondary occupation or hobby to supplement more regular sources of income.
5. Fertilizer supply and subsidy
6. Application of pesticides (p. 10).

From the foregoing, it becomes clear that there is a real "felt" need for vocational agriculture in Nigeria not only for prospective farmers but also for the adult farmers; otherwise, for both future farmers of Nigeria and adult farmers of Nigeria. Thus, a need for the introduction of vocational agriculture in the secondary schools of Nigeria exists and is hereby established. It now remains for a "Daniel to come to judgement," i.e. someone to come up with an educational instrument which can be incorporated into the curricula of the secondary schools so that vocational agriculture can become a reality. Specifically, the educational instrument is nothing other than a proposed vocational agriculture curriculum.

### Purpose of the Study

The purpose of the study by the author is to come up with a proposed instrument or some propositions whereby vocational agriculture can become incorporated and introduced into the curricula of the secondary schools of Nigeria. The author will study the Basic Core Curriculum for Vocational Agriculture being used in the high schools of the State of Oklahoma so as to find if it can be adopted in its entirety or what necessary modifications need to be made for the Core Curriculum to suit Nigerian needs and situations. In the course of the study, the author will attempt to work into the development of the Curriculum as well as the problems, if any, that have been encountered in its design. An additional attempt will be made to find out how effective it has been since it was put into use. Finally the author wishes to investigate the frequency and criteria the Curriculum should be changed, revised, or improved.

### Objectives of the Study

The immediate and remote, otherwise short-term and long-term, objectives of the study are as follows:

1. To study the development of the Basic Core Curriculum for Vocational Agriculture
2. To determine the acceptance and effectiveness of the Core Curriculum
3. To examine the possibility of either adopting or modifying the Core Curriculum for Nigerian needs and situations so that young Nigerians can also be exposed as well as inducted into productive and

prosperous agriculture right from secondary schools just like their counterparts in the high schools of the State of Oklahoma

5. To show young Nigerians that agriculture can also be a desirable occupation having features deserving recognition and creating satisfaction and pride, thus agriculture is not only a lucrative trade but also a bright career

6. To upgrade Nigerian agriculture to a level of higher production, preferably from mere subsistence to complacency

#### Questions

The questions that the study attempted to answer directly or indirectly are as follows:

1. What is vocational agriculture?
2. How is the Basic Core Curriculum for Vocational Agriculture developed?
3. How effective has it been as a tool for teaching vocational agriculture?
4. Is there any need for vocational agriculture in Nigeria?
5. Can the Basic Core Curriculum be adopted entirely or does it need to be modified to suit Nigerian needs and situations?

Some of these questions have either been saliently or subtly discussed earlier.

#### Hypothesis

A possible hypothesis which can be postulated for the study is as follows: if vocational agriculture education is among the factors that contribute to the agricultural development and proficiency in general in

the United States, would Nigerian agriculture be similarly changed if vocational agriculture were to be introduced in Nigeria? Agriculture in the State of Oklahoma, for example, was undoubtedly at one time in similar position as Nigerian agriculture. Also the author feels by comparison that Nigeria has as much agricultural potential as the State of Oklahoma.

#### Scope of the Study

The study is limited as well as confined to the State of Oklahoma and involves only the five supervisory school districts from which a representative sample for the study will be derived. Though the State of Oklahoma may vary in many respect from Nigeria, yet the study is in no way attempting to compare and/or contrast the two places. Rather, it is a matter of studying the development of an educational instrument in the former place and then exploring the possibilities of adopting, with or without modifications, the same instrument by the latter.

Essentially, basic ideas are applicable from the place of origin to any new place provided, of course, the necessary adaptatory measures are effected for successful adoption. Ojo (12) has remarked that agricultural methods imported from other regions cannot be rigidly transported in another environment.

#### Limitations of the Study

The study is limited to the State of Oklahoma because of time, materials, and costs. Otherwise, the author would have liked to involve any other states having vocational agriculture curriculum in their public schools. Again, as vocational agriculture is yet to be introduced



into Nigeria, Kano State, the author's birth place, should be selected for the pioneer pilot project. The try-out of vocational agriculture in the secondary schools should be in Kano State before it spreads to other parts of Nigeria, depending, of course, on the outcomes.

#### Definition of Terms

For the purpose of the study, the following definitions seem pertinent and relative:

Vocation--any occupation or the career to which one feels he is called.

Vocational Education--Evans (16) the part of education which makes an individual more employable in one group of occupations than in another.

Vocational Agriculture--Phipps (15) training of present and prospective farmers for proficiency in farming.

Curriculum--Popham (22) all the planned learning outcomes for which the school is responsible.

Core--Chiana (23) that part of the total school curriculum which is needed by all boys and girls who eventually become men and women in the society.

Basic Core Curriculum--Patton (24) a suggested guideline for instruction in vocational agriculture.

State of Oklahoma--one of the 50 states in the United States of America.

Kano State--one of the 12 states in Nigeria.

High School--Webster (25) secondary school in the United States offering academic or vocational subjects to students in grades 9, 10,

11, and 12.

Secondary School--a post primary institution in Nigeria offering general education.

Supervising (Cooperating) Teachers--teachers who supervise student teachers.

Non-Supervising (Non-Cooperating) Teachers--teachers who do not supervise student teachers.

#### Background of the Study

The author's exposure to agricultural education in which he comes to know about vocational agriculture inspires his appreciation and value for vocational agriculture. The author has also been concerned about the slow development of Nigerian agriculture. Consequently, youngsters despise agriculture. They keep aloof of it as a career and profession.

It is, therefore, the author's wish and ardent hope that the proposed educational instrument or approach to emerge from the study will be hailed as a long-awaited revelation which will upgrade Nigerian agriculture as well as change the attitude of Nigerian youth toward agriculture. The author also hopes that the proposed curriculum will ring the gong for agricultural renaissance and reformation in Nigeria. Let it save Nigerian agriculture just as St. Joan of Arc delivered France in the Hundred Years War following the "voices" she claimed to have heard.

## CHAPTER II

### METHODOLOGY

The purpose of this chapter is to describe the methodology of the study. This includes the development of the instrument to be used for data collection, the selection of the sample for the study, and finally the type of statistics to be applied for the analysis of the data collected. The analysis will reveal some findings from which the author can draw up some conclusions as well as make some recommendations. All these will show the results and overall picture of the study.

#### Development of the Instrument

The researcher, with the help and unremitting direction of his major advisor, has developed a set of questions. This questionnaire is to solicit responses on some concepts and practices in the development and usage of the Basic Core Curriculum. A sample of the questionnaire is included in the appendix. The specific items on which the researcher wants to solicit responses are these:

1. Concepts or ideas of what constitutes a curriculum
2. Concepts of curriculum development applied to vocational agriculture
3. Evaluation of Oklahoma Core Curriculum for Vocational Agriculture by indicating the appropriate time teachers follow or use the Core Curriculum in their teaching

4. Nature of the content of the curriculum as to whether the instructional materials are too advanced or too easy, and whether they are very relevant or not relevant

5. Evaluation of the format of the units of instruction

6. How often a curriculum should be revised

7. Concepts as to supplementing the Core Curriculum, i.e. what percent of the core units need supplementation

8. Extent of the need for more suggestions for variations in teaching methods

9. Evaluation of some sources for supplementation

Another set of questionnaires developed by the Curriculum and Instructional Materials Center of the State Department of Vocational and Technical Education, Stillwater, supplements the author's main questionnaire. The author wishes to point out that his subject of study, i.e. the Basic Core Curriculum for Vocational Agriculture has been formulated as well as developed at the Curriculum and Instructional Materials Center which is abbreviated as CIMC. This supplementary questionnaire solicits responses on which units of instruction have been taught and which units have not been taught. Reason(s) for not teaching any unit(s) should be checked among the handful of reasons included in the questionnaire. A sample of this questionnaire is also included in the appendix. However, for purposes of convenience, both questionnaires are merged together and distributed as a single entity.

The questionnaire was distributed by hand to teachers who were in Stillwater campus attending the Seventh Annual Conference of Vocational and Technical Education. The questionnaire was handed out on the last day of the conference. This God-sent golden opportunity has saved the

author many inconveniences and financial costs too, namely purchasing stamps and envelopes to mail out the questionnaires and writing covering letters to accompany the questionnaires to ask for the support and cooperation of the participants. They were, however, allowed to take the questionnaire to their homes so that they could have sufficient time and ease to study the questionnaires prior to indicating their respective responses. They were told to mail in the completed questionnaires to the Agricultural Education Department where the author collected them for analysis.

The teachers come from various high schools which are scattered throughout the five supervisory school districts. The teachers are divided into two distinct groups. Again, they are further subdivided into subgroups. First, they are divided into cooperating or supervising and non-cooperating or non-supervising teachers. For clarification of these terms, refer to the "Definition of Terms" in Chapter I. Second, each group is subdivided between (1) teachers who have taught for eight or more years and (2) teachers who have taught for only eight years or less.

This subdivision is specially made in order to measure extreme responses to the acceptance of the Core Curriculum between those who have spent much time using the curriculum and those who have spent little time or just started using it. There should be extreme differences in the responses of the subdivisions. These extreme responses should capitalize on the acceptance, usefulness, and effectiveness of the Core Curriculum as a tool of instruction and also whatever reservations teachers might have about the Core Curriculum.

### Collection of Data

The author would collect the questionnaires as returned from the Agricultural Education Department so as to collate the data before analysis. The author feels that the return of the questionnaires will be good since the teachers involved in the study are enrolled in credit-earning courses during the conference. Furthermore, their responses are expected to be genuine and to their maximum too. Thus, the author is saved the problem of having few questionnaires to deal with owing to poor returns of questionnaires from participants. In most cases, poor returns of questionnaires affects the study as there is no sufficient data to make appreciable analysis.

### Analysis of the Data

The data collected from the questionnaires will be compiled and tabulated so as to fulfill the purpose and objectives of the study. This research being descriptive in nature, the author considers using descriptive statistics: arithmetic counts, percentages, means, and numerical rankings to provide the sought for information.

Chapter IV shows the statistical analysis of the data as well as the presentation of the findings.

## CHAPTER III

### REVIEW OF LITERATURE

#### Background of the Basic Core Curriculum for Vocational Agriculture

The primary purpose of vocational agriculture is to prepare students, especially those in secondary schools for careers in agriculture so that they become self-sufficient, employable, and good citizens. Thus, they are prepared not only to make a living but also to become prepared to live a good life. These purposes are exactly identical with the fundamental and/or "controlling purposes" of the Smith-Hughes Act, 1917, which has provided for vocational education. The Act essentially and specifically provides for vocational training in agriculture, trades and industries, and home making. The author merely paraphrases as well as expatiates on the controlling purposes of the vocational education act. The author feels that Senators Smith and Hughes should be highly commended for their foresightedness and efforts in enacting vocational education.

But before the preparation process begins or takes place, the student should screen himself and then identify the careers which are open and suitable to him based on his particular individual "uniqueness" and needs. The Center for Vocational and Technical Education at the Ohio State University has developed a model of eight elements and eight expected outcomes of career education. The elements, expected outcomes

and brief descriptions are presented in Figure 3 (26).

<u>Elements</u>	<u>Expected Outcomes</u>
<u>Self Awareness</u> Knows self, what he hopes to become	<u>Self Identity</u> Knows himself and has developed a value system
<u>Career Awareness</u> Understands a broad range of careers, and how they serve him, the community, and society	<u>Career Identity</u> Selects and becomes established in a role or roles within the world of work
<u>Appreciations, Attitudes</u> Develops a value system toward his own choice and that of others	<u>Self-Social Fulfillment</u> Develops an appreciation of his own role and the role of others
<u>Economic Awareness</u> Perceives processes of production, distribution and consumption	<u>Economic Understanding</u> Solves personal and social problems in an economic environment
<u>Decision-Making</u> Understands decision-making process	<u>Career Decision</u> Develops a plan for immediate, intermediate and long range career development
<u>Skill Awareness</u> Understands skills needed by workers in certain job roles	<u>Employment Skills</u> Develops competence in performance of job skills
<u>Employable Skills</u> Searches for, locates and obtains a job	<u>Career Placement</u> Obtains employment in line with career goals
<u>Educational Awareness</u> Recognizes the need for specific education for career roles	<u>Educational Identity</u> Develops ability to select educational avenues for pursuit of career goals

Source: "A Model for Expanding Areas of Learning" by Alfred Mannebach.

Figure 3. Elements and Expected Outcomes of Career Education in Agriculture



The model can help a student to screen himself and identify suitable career(s) to him rather than to plunge and flounder into unsuitable careers. Some of the careers in agriculture identified in the State of Oklahoma are listed below. In fact, the Basic Core Curriculum Center capitalizes on these careers:

1. Agricultural Production (Farming and Ranching)
2. Agricultural Supplies: chemicals, fertilizers, seeds, livestock feeds, petroleum supplies, etc.
3. Agricultural Mechanics: sales and services of agricultural power units--tractors, machinery, and related equipment
4. Agricultural Products: processing and marketing
5. Ornamental Horticulture: production, distribution, and utilization of horticultural plants for ornamental values, landscaping, etc.
6. Forestry: tree growing and management, forestry protection, wood production and utilization, recreation, etc.
7. Agricultural Resources: principles and processes of conservation and improvement of environmental resources, operation and management of recreational facilities
8. Other Agriculture: miscellaneous, non-professional agricultural occupations in industry, government, education, or other services.

#### Development of the Basic Core Curriculum

#### for Vocational Agriculture in Oklahoma

Before delving into the crust of the matter, it will be ideally proper to discuss "curriculum" in general. This is because even though a curriculum has been recognized as a tool of organizing instruction, yet it is just as controversial among educators as fire has been as a

tool of managing an ecosystem (habitat) among ecologists. Popham (22) uses a different and less sharp comparison: "Curriculum . . . evokes in many teachers the same enthusiasm as 'polemics' does in an activist" (p. 45). There are varying opinions among educators or curriculum architects that, hitherto, there is no consensus on a standard definition of curriculum which one can directly and safely use without reservations or fear of contradiction from some quarters. This is an ultra commonality with most term concepts. For instance, there are varying definitions of program planning given by adult educators and extension personnel. Hitherto, there is no consensus on a standard definition of program planning. But it is conclusively clear that nothing of any worth will ever be attempted if all possible objections or differences must first be overcome. Therefore, it is necessary to have to use one definition regardless of the divergent opinions (views). After all, it will not be possible and easy to handle different opinions. One simply needs to selectively restrict one's choice in a multitude of given options. However, in the author's questionnaire, a consensus of opinion on the best definition of a curriculum is indicative. Out of ten different statements, the teachers have rated statements eight and one as best and second best respectively. Statement five is rated the lowest. The cited statements read as follows:

1. All the learning experiences the students have while attending school
5. A well planned "core" of subject matter concepts and information desirable for the learner, including instructional sequence
8. A course of study in a school

Details of these ratings are in Chapter IV. The author feels that these ratings, especially the one rated best will not be compatible to the Curriculum and Instructional Materials Center of the State Department of Vocational Technical Education. It looks similar to a layman's evaluation. As a matter of fact, the author gets this definition from Webster's Dictionary.

However, despite their differences on the concepts of curriculum, most educators and/or architects of curriculum are unanimous on the sources of objectives for curriculum development. While Cay (28) does not specify these sources, Popham (22) specifies them as "the learner, the society, and the subject-matter discipline" (p. 49). He, however, does not fail or hesitate to mention that these sources are neither mutually exclusive nor totally exhaustive. This means that these sources are not wholly independent of one another but rather inter-relatedly dependent. Also, these sources are not final as there **might** be some other sources which can be used in formulating objectives towards curriculum development. It should be noted that it is these sources that make a curriculum very flexible and subject to changes rather than rigid and "gospel truth" or gospel like. A curriculum is changed, revised, or improved when everyone or all of the sources demand changes. John Dewey (29) pointed out that social change necessitated educational change. The author appreciates that this feature has been fully incorporated in the Basic Core Curriculum.

#### Historical Development of the

#### Basic Core Curriculum

Patton (24) has made these observations in his study to determine

the acceptance and usefulness of the Basic Core Curriculum. In Oklahoma teachers of vocational agriculture, faced with the continuing problems as to what to teach and whom to serve, are further perplexed and hampered because of a lack of adequate and relevantly organized instructional materials to assist them in meeting the needs of students. This has created need for curriculum development. New curricula must be developed to accommodate the existing and changing needs of all students. Hence, Cay (28) remarks that curriculum building is a continuous rather than a static process of making and unmaking as well as decisions and counter-decisions. According to him, building a curriculum is more difficult and complicated than putting together the pieces of a jig-saw puzzle.

The Curriculum and Instructional Materials Center (CIMC) of the State Department of Vocational and Technical Education was established in 1969 under the Vocational Education Amendments of 1968 which authorized appropriations of ten million dollars for curriculum development in vocational education. The general purposes of the center are to provide for the development, collection, and dissemination of curriculum materials for use in vocational and technical education programs in Oklahoma. The Curriculum and Instructional Materials Center (CIMC) has, therefore, instituted one of the most unique methods of developing curriculum for vocational agriculture with an extensive use of measurable and observable objectives. These objectives are as follows:

1. Performance (Behavioral) Objective--the statement of performance or changed behavior which instruction is to produce stated in terms of observable or measurable student performance
2. Terminal Objective--an objective stating the subject matter to

be covered in terms of student performance within a unit of instruction

3. Specific Objective--an objective stating the performance required of the student in order to reach the terminal objective

The Division of Vocational Agriculture Education in the Curriculum and Instructional Materials Center has developed a Basic Core Curriculum Guide outlining four years of instruction in vocational agriculture. The aim of the guide is to assist teachers in improving instruction in vocational agriculture and thereby attempt to ease their increasing problems of what to teach and whom to serve. From the Basic Core, units of instruction have been developed covering specific areas of instruction for each of the four years as follows:

1. Basic Core Curriculum Guide for Vocational Agriculture I (1970, revised 1971): units of instruction have been developed to cover 60 percent of an agriculture teacher's time in teaching basic information in the following areas: (1) Orientation and Careers, (2) Leadership, (3) Supervised Farm Training, (4) Animal Science, (5) Plant Science, and (6) Agricultural Mechanics.

2. Basic Core Curriculum Guide for Vocational Agriculture II (1971): units of instruction have been developed to cover 60 percent of an agriculture teacher's time in teaching basic information in the following areas: (1) Agriculture Chemicals, (2) Plant and Soil Science, (3) Animal Science, (4) Supervised Farm Training, (5) Leadership, and (6) Agricultural Mechanics.

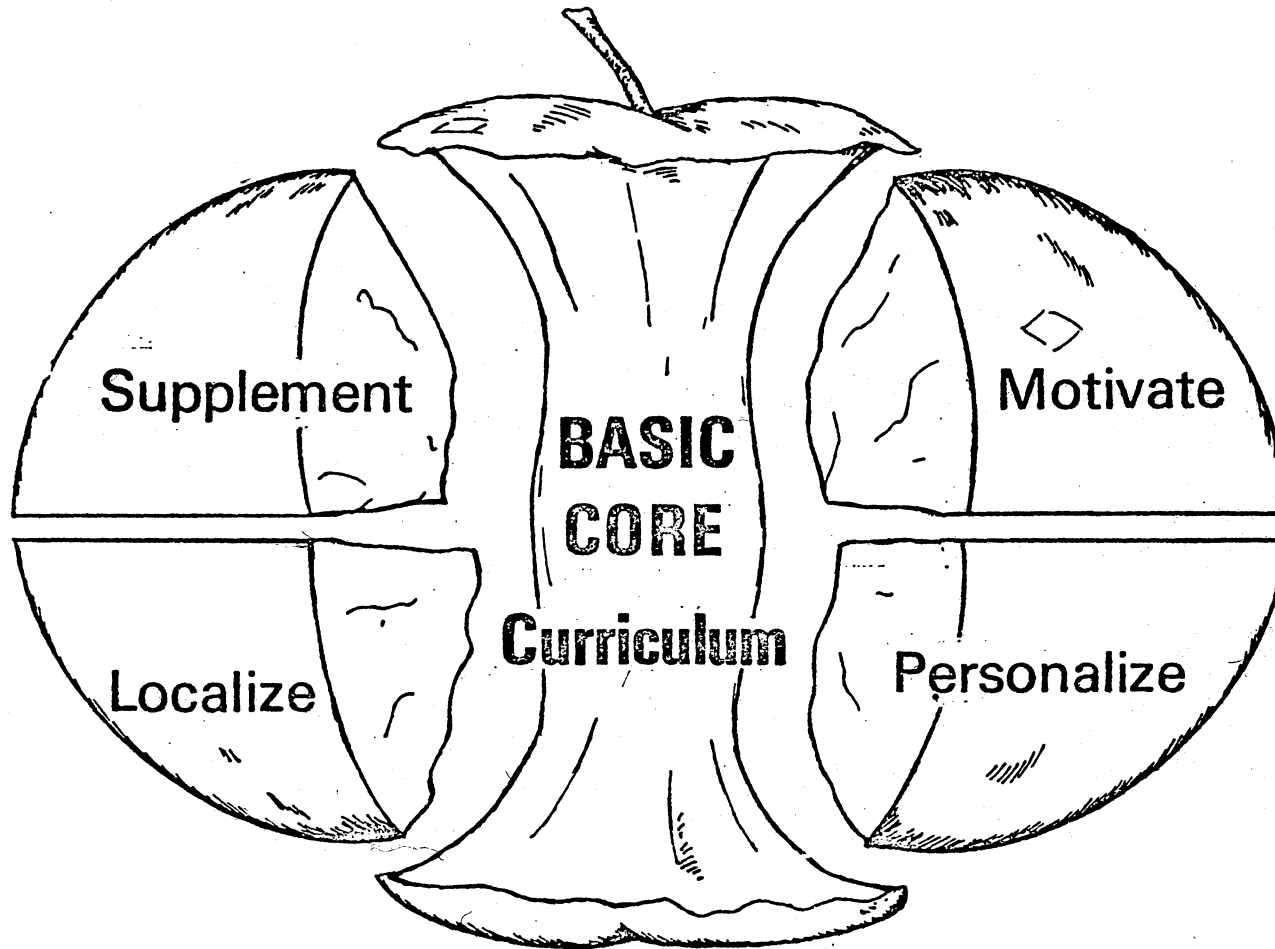
3. Basic Core Curriculum Guide for Vocational Agriculture III (1972): units of instruction have been developed to cover 60 percent of an agriculture teacher's time in teaching basic information in the following areas: (1) Plant and Soil Science, (2) Animal Science,

(3) Supervised Farm Training, (4) Farm Business Management, (5) Leadership, (6) Career Selection, and (7) Agricultural Mechanics.

#### 4. Basic Core Curriculum Guide for Vocational Agriculture IV

(1973): units of instruction have been developed to cover 60 percent of an agriculture teacher's time in teaching basic information in the following areas: (1) Farm Business Management, (2) Agricultural Mechanics, (3) Leadership Careers, and (4) Plant and Soil Science.

Each of the instructional units is prepared in a definite sequence and format. The format includes behavioral objectives, i.e. terminal and specific objectives, suggested activities for instructors and students, information sheets, assignment sheets, job sheets, transparency masters, tests, and answers to tests. Again, the instructional units, as stated in each of the Core Guides, are designed to account for 60 percent of an instructor's time of teaching. The remaining 40 percent is spared to the individual instructor in order for him to have freedom and flexibility to use his own initiative in improving as well as consummating instruction in making content selection compatible with the demands of his local community. In other words, the teacher should personalize as well as localize instruction for himself and his students too. After all, the Core Guide merely gives the teacher guidance and essential information for instruction as shown in Figure 4. It is up to the teacher to know how to organize the dissemination of this information effectively. He should personalize, localize, and supplement the information as well as motivate the students so as to establish a need to know. The core is just like a skeleton, and it is left to the teacher to muscle the skeleton so as to produce or facilitate movements. Finally, the units of instruction in each area of instruction are



Source: State Department of Vocational and Technical Education,  
Stillwater, Oklahoma

Figure 4. CIMC Model of the Basic Core Curriculum

specified in the questionnaire at the appendix.

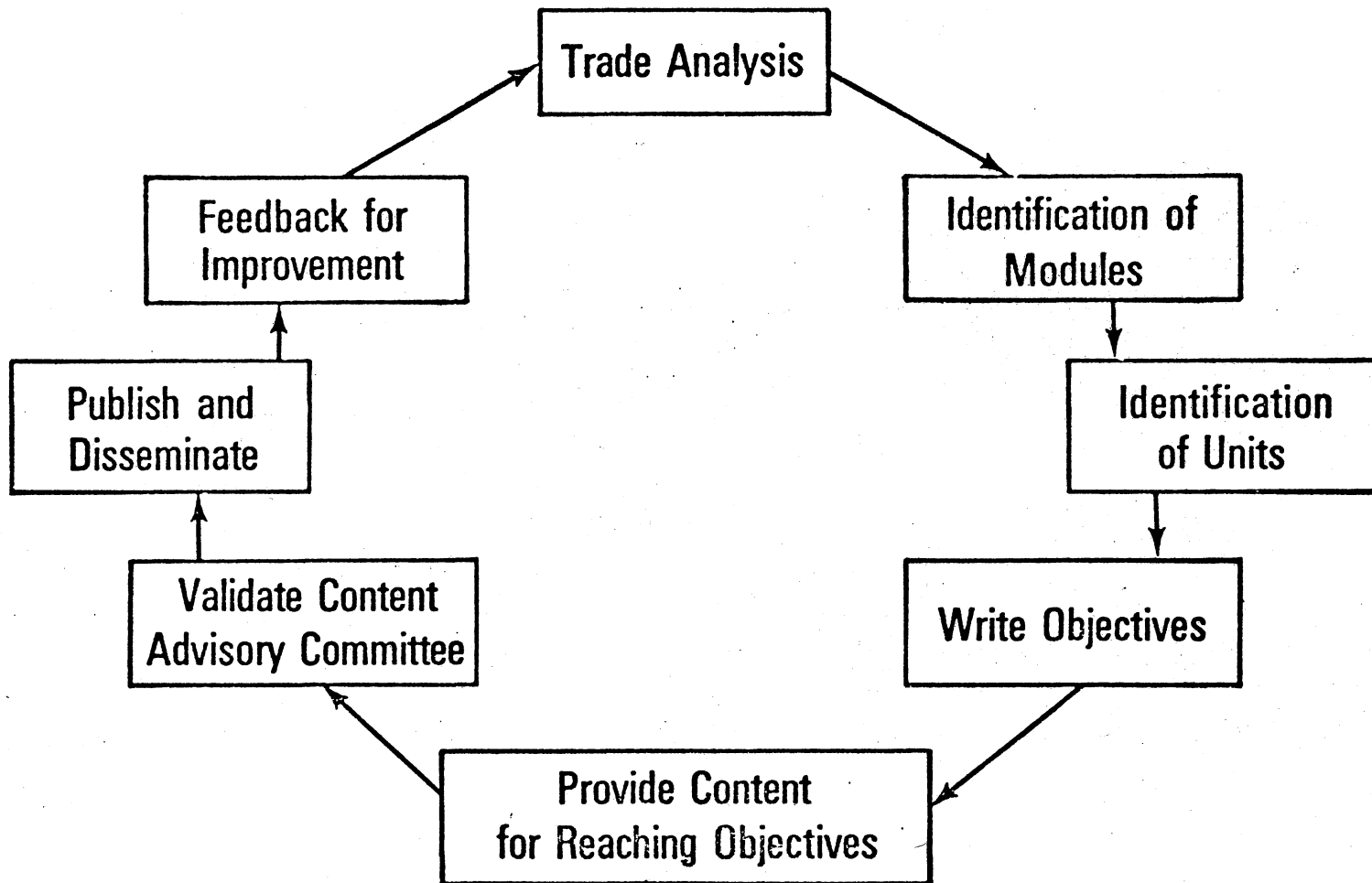
The developmental process of the Basic Core Curriculum can briefly be contrasted in the model of a revolving cycle produced by Curriculum and Instructional Materials Center in Figure 5.

This model of revolving cycle clearly verifies Cay's (28) opinion that curriculum building is a continuous rather than a static process of making and unmaking decisions. The cycle starts from trade analysis which briefly is an inventory of essential elements (skills) of an occupation for which training (instruction) can be provided prior to employment. In other words, trade analysis is identifying training skills needed in an occupation. Trade analysis and vocational agriculture education are like two brothers or like a brother and a sister. While trade analysis identifies the training skills needed in an occupation, vocational agriculture education then provides the training skills or prepares a person to acquire the training skills needed so that he can enter into that particular occupation. The cycle then revolves back to its starting point for another analysis based upon the feedback received on emerging situations. Hence, the process is continuous.

As stated earlier, the primary purpose of vocational agriculture education is to provide training skills or prepare students in high schools or otherwise to acquire skills needed for them to become successfully engaged in agricultural careers. This training is provided by the Basic Core Curriculum. It is organized in instructional units which have been discussed previously.

By way of comparisons, the author is inclined to believe that the Oklahoma Basic Core Curriculum is distinctively outstanding from the curricula in other states. This is because of the extensive use of





Source: State Department of Vocational and Technical Education,  
Stillwater, Oklahoma

Figure 5. CIMC Model for Curriculum Development

measurable and observable objectives as well as the format of the units of instruction. In his study, Patton (24) has briefly investigated the development of vocational education curriculum in other states. His findings are summarized as follows:

1. The Texas Education Agency has developed units of instruction for Vocational Agriculture I and II. The units are developed using current agricultural information in text form and including transparency masters and additional references.

2. The Agricultural Education Section of the University of Missouri has developed units of instruction for Vocational Agriculture I and II and stresses instruction in these areas: (1) Mechanics, (2) Careers, (3) Leadership, and (4) Supervised Occupational Experiences. These units are written in topic outline form and suggest teaching procedures and illustrative materials.

3. North Carolina has developed a guide for course planning in Vocational Agriculture I designed for ninth grade students. The guide suggests teaching and learning activities for the world of work in these areas: (1) Mechanics, (2) Animal Science, and (3) Plant and Soil Science.

4. Indiana has developed a core curriculum in Vocational Agriculture I and II. These publications include objectives and motivation statement and list references and suggestions for teaching the units. Topics of instruction are broken down in these areas: (1) Orientation, (2) Career Opportunities, (3) Future Farmers of America, (4) Agricultural Mechanics, (5) Animal Science, and (6) Soil Science and Plant Science. The Indiana Core Curriculum has more similarities to the Oklahoma Core Curriculum than the other curricula discussed above.

The most appropriate study the author can find on a basic core curriculum is the study conducted by B. G. Patton (24). The purpose of this study was to determine the acceptance and usefulness of a basic core curriculum for Vocational Agriculture I. To accomplish this purpose, he developed the following objectives which are summarized below:

1. To determine the extent that the basic core curriculum is being used
2. To determine if the basic core curriculum is adequate for today's teaching agricultural programs
3. To determine if more or less information should be included in order to teach the specific lessons
4. To determine if this approach in curriculum development is taking any initiative away from the teacher
5. To determine if the basic core curriculum could be adapted to each vocational agriculture teacher's local community
6. To determine if a need exists for the continuation of this kind of curriculum development for Vocational Agriculture II, III, and IV

Data was collected by the use of a mailed questionnaire which was sent to 100 vocational agriculture teachers in 20 schools randomly selected from each of the five supervisory school districts. A panel of experts consisting of curriculum specialists and faculty members of the Agricultural Education Department perfected the questionnaire. Eighty-six of the 100 questionnaires were returned. This constituted 86 percent return. Teachers were divided into two groups based on teaching experiences by years.

Following the analysis of the data, his findings relative to the

objectives of the study are as follows:

1. Teachers indicated that they could and were using the Basic Core Curriculum for Vocational Agriculture I which accounted for 60 percent of their instructional time. Also, teachers indicated that they could cover more material than they could otherwise without having the Basic Core Curriculum.

2. Teachers agreed that the material contained in the Basic Core Curriculum for Vocational Agriculture I was adequate for teaching today's agricultural programs.

3. Teachers agreed that the approach being used in curriculum development did not take any initiative away from the teachers in their preparation and did not keep teachers from being innovative in their teaching.

4. Teachers indicated that transparencies should be included in the units instead of transparency masters. Additional agreement indicated that students needed a copy of the transparency master duplicated as an information sheet.

5. Teachers agreed that the Basic Core Curriculum for Vocational Agriculture I could be adapted to each teacher's local community and that the curriculum was flexible enough to be adapted to each individual student.

6. Teachers indicated that the approach used in the development of curriculum for Vocational Agriculture I should be continued in developing curriculum for Vocational Agriculture II, III, and IV.

7. Teachers agreed that students achieved at a higher level when using units of instruction written with behavioral objectives compared to the traditional way of teaching without using behavioral objectives.

8. Teachers agreed that the Agricultural Education Department should continue to offer courses in order to develop competence in teaching the Basic Core Curriculum for Vocational Agriculture.

The following excerpts of teachers' comments in the study by Patton (24) seem to substantiate their responses:

I think the basic core curriculum is the best that has happened for vo-ag.

We need Vo-Ag II, III, and IV curriculum books as soon as possible.

I think very highly of this teaching material and I have used it quite extensively this year.

I feel the basic core curriculum is a big step forward in Oklahoma Vocational Agriculture.

I have only taught two years and this basic core curriculum has been one of the best helps that I have found. It gives me more time to do work and to do a better job of teaching.

I think that this basic core curriculum has been one of the best things that the state department has come up with.

I use the basic core curriculum material and will use the other when it is finished. I feel it will greatly help Vo-Ag. You fellows are doing a tremendous job and my only regret is that it wasn't done 22 years ago.

I wish I could have had this 21 years ago. I certainly could have done a better job through the years in my teaching. It gives me more unity in Vo-Ag and certainly is impressive to the administrations.

The basic core curriculum for Vo-Ag I was expertly done and I use it and will continue to do so. This is one of the best things that could happen to improve Vo-Ag in Oklahoma (pp. 34-36).

The author feels encouraged by the findings and excerpts of the above study. The author is particularly impressed by the findings which correspond with Objectives 1, 2, 5, and 6 of the study. These objectives have direct bearing on some of the objectives of the author's

study.

Patton (24) has made the following recommendations:

1. The Curriculum and Instructional Materials Center should implement a plan for developing transparencies to be included in the Basic Core Curriculum.
2. Transparency Masters should be duplicated as information sheets to be made available to vocational agriculture students.
3. Audio-visual materials should be developed for use in supplementing units of instruction.
4. There should be increased emphasis on training teachers to teach the Basic Core Curriculum.
5. An effort should be made for the continuation of curriculum development for Vocational Agriculture II, III, and IV (p. 40).

The author again finds the observations of Eugene Anderson (30) on vocational secondary education in Tanzania very interesting as well as most appropriate to this study. Anderson has taught vocational education for three years at the Tumaini Secondary School in Tanzania.

Like Nigeria, Tanzania is in Africa. It is also one of the developing countries in Africa. See Appendix E. According to Anderson (30) agriculture has been identified by the Tanzanian government as the base on which the social and economic development of the country will be built. Agriculture is important in Tanzania because there is no other segment of the economy which is capable of producing the wealth needed to finance development. Twelve million people, i.e. 95 percent of the population, obtain their livelihood from agriculture. This farm percentage exceeds by 10 percent the Nigerian farm percentage which is 85 percent. However, it is these twelve million people, most of whom are subsistence farmers as in Nigeria, who must improve and increase production in order to feed the country and any surplus agricultural

products can be sold to finance the development of the country. Unlike Nigeria with her oil reserves, Tanzania singularly depends on agriculture.

But it is relieving that some remedial measures have been adopted and initiated by the Tanzanian government. Anderson (30) has stated that secondary schools are becoming vocational schools by providing vocational education for all the secondary school students. Vocational training is seen as the most realistic and appropriate type of secondary education for Tanzania. Under this drive, about 30 percent of the country's secondary schools will become agricultural secondary schools. Anderson (30) remarks that this change contrasts with the situation before the plan when only one of the 112 secondary schools in the country was teaching an agriculture course.

Three purposes are identified for introducing vocational education in the secondary schools of Tanzania. They are as follows: (1) to produce the trained manpower needed for national development; (2) to produce graduates who have a general knowledge about agriculture production and appreciation of farming, farmers, and rural life; (3) to attempt to obtain a better return on the investment in secondary education. Secondary education is largely financed by the government in Tanzania as it is also the case in Nigeria. National development in Tanzania depends upon the production of its farmers and laborers. The greater and more efficient this production is, the faster the nation will be developed. Therefore, vocational secondary education is intended to enable students to become contributors to national development by exposing them to different work areas, make them empathic and thereby become more effective and efficient in their jobs.

Before this education reformation, Tanzanian secondary schools, like Nigerian secondary schools hitherto, were continuing in a colonial role of education as clarified by Babs Fafunwa (8) which had little relevance to the needs of the people and the country. It was also impervious to changing times and needs. In fact, the education system or goal was not geared to the needs of the people and the country. This is one of the key factors which have held back most African countries which were at one time colonies. The colonial education system was a calculated imperial repression and exploitation too. In the system, emphasis was on arts and science preparation for college or university. But usually only 10 to 15 percent of the secondary school graduates went on to higher education. Most of them were assigned to employment in government or other organizations in supervisory management or education positions. Very few could become farmers, mechanics, factory workers, or craftsmen because they were avocational; they would not like to soil their hands. It is regrettable that Nigeria is still stuck with this colonial system of education. It is the author's ardent hope that this study will have a major breakthrough to that imperial havoc.

Anderson (30) points out that five vocational areas have been selected for the secondary school curriculum. These areas are as follows: (1) Agriculture, (2) Technical, (3) Commerce, (4) Crafts and Industry, and (5) Home Economics. Initially, each secondary school will concentrate on one of these areas. Later, some schools will provide training in two or three of these vocational areas. Again, each of these areas will run for four consecutive school years. For instance, the first year of secondary school agriculture is an orientation to agriculture as the basis for national development. During the second



and third years, production agriculture, agricultural economics, and agricultural mechanics will be taught. The fourth year is devoted to planning, organizing, and managing "socialist" agricultural production. The syllabus allocates approximately two thirds of the agriculture class periods to practical work so as to incorporate the principle of application and learning by doing (doing to learn). This principle allows students to make permanent impressions in their minds of their lessons.

In another observation of a study, J. N. Okorie (18) has remarked that any attempt to curb the mass exodus of the youth from the village as well as their indifference to farming will involve making all forms of agriculture more attractive. He has observed these impressions:

Agriculture is generally looked down upon, hence, the youth have no inclination to associate themselves with farming. Agriculture is viewed as the last resort for those who have failed in other occupations (p. 86).

Consequently, the young men are willing to loiter in the cities indefinitely in search of jobs instead of going back to the land. Farmers are principally recognized for their role in the society in producing food and fiber for the people.

Okorie as quoted by Mager and Kenneth (34) gave his own explanation of the poor image of agriculture by Nigerian youth. According to him, what may be lacking is the development of a basic philosophy underlying the study of agriculture in the secondary schools. Such a philosophy needs to emphasize the value of agriculture in relation to other careers. The researcher believes that this emphasis could, undoubtedly, be achieved in vocational agriculture education. As discussed earlier, vocational agriculture education provides not only (practical) training or instruction in agriculture, but also career awareness especially in

the eight agricultural occupations so far identified. These eight agricultural careers are cited elsewhere in this chapter. This lack of sound philosophy in agriculture was proven in that virtually all the 200 students interviewed in Okorie's study wanted to see agriculture become a part of the secondary school curriculum in rural areas. The students again with the same breath expressed great need and interest for the establishment of a national youth organization for the promotion of agriculture. They attributed the poor performance of farmers to their lack of adequate education.

In the study, agricultural students were requested to evaluate several occupations. The result showed that farmers, medical doctors, and engineers were rated highly. Again, on the question of occupational preferences upon graduation, 14.3 percent of the students expressed a desire to become farmers. In general, a majority of students believed that agriculture is by all means a good occupation and that it has value and potential for future rewards; nonetheless, many are not willing to readily accept the farm as the best place for young people. The researcher believes that this is because of the poor image and enormous misgivings attached to agriculture due to lack of sound philosophy and inductive orientation to agriculture. Organized units of instruction under a properly constructed or developed curriculum for vocational agriculture will certainly help to remedy the situation.

#### Nigerian National Education Objective

The Nigerian government is awakening to the task of developing great interest in the unity, development, and progress of the country through sound and expanded provisions for education. The government has

planned to launch a crash program in the primary education under the title of Universal (Free) Primary Education, i.e. free-for-all primary education.

The aim of the Nigerian government is to introduce free but in some instances compulsory primary education to all children especially those 6 through 11 years of age. Thus, the government is becoming committed, at last, to her obligatory responsibility of providing education to her children. In most countries, child education is the obligatory responsibility and prime concern of the government (state). The education and welfare of the child remain with the state under the philosophy that the child belongs to the state. The proposed program is tentatively scheduled to begin in September, 1976.

There are, at present, some five million children in school in Nigeria. The actual primary school enrollment in 1972 was only 4.4 million. The details of this enrollment is shown in Table II (26). Enrollment is anticipated to quadruple when the Universal Primary Education for 6 through 11 year olds is finally established in view of the big population increase. Last decade, 1963-1973, Nigeria had a growth rate of approximately 1.5 percent as the population ranged from 55.66 million to 79.76 million (32). But 1973 World Population Data (31) shows a growth rate of 2.6 percent and projects Nigerian population to be 84.7 million in 1985. The provisional population figure for the 1973 census is rounded off to be 80 million (32). It is speculated that the 6 to 11 year olds in 1981 will be some 18 million and that this number will be growing by well over half a million each year (26).

TABLE II  
 FIGURES FOR THE UNIVERSAL PRIMARY EDUCATION

State	Primary School Enrollment 1972 Thousands	Total Population 1973 Provisional Census Figures Millions	Ratio Col. 2 and Col. 3
East-Central	1,170	8.06	1 : 7
Mid-Western	455	3.24	1 : 7
South Eastern	478	3.46	1 : 7
Lagos	271	2.47	1 : 9
Western	928	8.92	1 : 10
Rivers	233	2.24	1 : 10
Benue-Plateau	192	5.17	1 : 27
Kwara	144	4.46	1 : 32
North Central	148	6.79	1 : 46
North Eastern	158	15.38	1 : 97
Kano	96	10.90	1 : 114
Total NIGERIA	4,392	79.76	1 : 18

Source: 26, p. 1155.

The anticipated speculative benefits of the plan are two fold. First, mass education of this nature will trigger as well as serve the political and social purpose of creating or harmonizing a modern united and democratic Nigeria. Second, universal primary education will initiate a new emphasis on learners' needs. It will also imply a recognition of an enormous change and diversity in educational patterns and provisions. For instance, vocational training can be provided as well as incorporated in the educational system so as to cater for those who do not succeed in higher education. The author feels, therefore, that this change should become the long awaited panacea for all the educational

repression and exploitation of the imperialists. It will be a major breakthrough to their havoc.

The obvious problem with the program will be mass production of school leavers without wage employment. Thus, the author feels that those who welcome free primary education because they think it to be a short cut to paid jobs will definitely be disappointed. This is because such graduates do not possess any skills as yet. This is a clear disadvantage of the present educational system which is, in general, avocational especially at the lower levels. Already, there is a mass production of primary and secondary school graduates in Nigeria. They are vigorously competing for employment. But unfortunately, these graduates can only be employed in government or other organizations in supervisory, management, or educational positions as it is the case in Tanzania, i.e. before adopting vocational education in the secondary schools. None of them can be engaged in farming and farm related occupations. While employers are becoming even more selective, the unskilled are still chasing jobs along with the semi-skilled, and skilled.

One can easily spot signs proclaiming vacancies, thus "Smart boy wanted" (33, p. 1547). Therefore, the question to be launched is what shall become of the future graduates from the program if they do not qualify for further education. The answer, as the author feels as well as has implied earlier, calls for re-thinking about the system of education, about curriculum and about needs and standards. If the young elements must go to school in a country where 80 percent of the population is engaged in agriculture and if the secondary school students are made to blend their academic work with vocational training, it is likely that agriculture occupational careers will appeal to such students.

Consequently, they will stop concentrating on or aspiring only to certain occupations. Chief Eke (20) visualizes that if dignity were accorded to every profession and the remunerations therefrom in cash or kind were adequate, the present unemployment would be highly reduced. Concentration on certain professions will also equally be lessened. It is ideal here to recall the inspiring statement on the need for vocational education made by the Nigerian Federal Commissioner for Education, Chief A. Y. Eke (20):

Unless the student, right from the moment he is admitted into the . . . school, is taught to use not only his head but also his hands and is encouraged not to despise manual labour, the present craze for white-collar jobs by our young people would lead to disaster sooner or later (p. 2).

The author is in full agreement with this statement especially considering the number of more graduates to come from the proposed educational program. The author feels tremendously encouraged and motivated by the statement. It appears that the author's study will be a success. If otherwise, it will, at least, be welcomed and considered. An obvious inference from Eke's statement is that there is a "felt" need for vocational education in Nigeria. As a matter of fact, Eke made the statement when he delivered a speech entitled, "A New Policy on Education in Nigeria," at a conference of school principals and inspectors.

E. A. Ojo (12) conducted a study to determine the factors motivating young Oklahomans to choose farming as a career and to relate his findings to young Nigerians. The author feels that some of the findings, conclusions, and recommendations of the above study are relatively pertinent to this study. Instruction in vocational agriculture does not encompass everything necessary to get established in farming. There are

some outside and latent factors which vocational agriculture instruction does not cover.

### Findings

Personal and Family Data. The study showed that family background and parental influence contributed to the choice of farming as an occupation by the respondents. Many of them were raised on the farm and their parents had lived several years on the farm. This is true in Nigeria. In fact, farming in Nigeria is rather hereditary. But, on the other hand, the situation does not hold true with those who have attended any school despite their parental background and influence. This group of young Nigerians enormously feel that they are liberated from (the drudgery of) farming. But the real explanation for this erroneous attitude according to the author's opinion should be lack of proper orientation and organized training in agriculture. There is a poor relationship plus tremendous misgivings between the educated young elements and agriculture. The former cannot marry the latter unless some adjustments are made and better channels of communication established.

The following were found to be reasons why some Oklahomans were drifting away from the farm; they are summarized and arranged in descending order.

1. Lack of financial help
2. Increasing cost of land
3. Increasing cost of production
4. Unavailability of land
5. Other unspecified reasons
6. Lack of social prestige in farming

7. Desire for city life
8. Too much labor in farming

In the Nigerian case, these problems will comparatively be ranked in somewhat reversed order as follows:

1. Too much labor in farming
2. Lack of social prestige in farming
3. Lack of financial help
4. Desire for city life
5. Increasing cost of land
6. Unavailability of land
7. Increasing cost of production
8. Other unspecified reasons

Another diverse difference is while marketing is not a problem in Oklahoma, it is one of the big hinderances to agricultural development in Nigeria. There are, however, some similarities which can be safely drawn. Farmers in both Oklahoma and Nigeria have problems obtaining adequate finance, fertilizers, and maintaining machinery and equipment all along. These problems are more saliently severe in Nigeria than in Oklahoma. The health of farmers grows weaker after establishment more than before establishment. This is obviously due to incessant activities.

Influential Persons and Organizations. The vocational agriculture was found to have influenced farmers the most. This was followed by the mothers, fathers, FFA, wife, friends, 4-H Club, other unspecified items, sisters, brothers, Farmers' Union, other teachers, and the Farm Bureau. In Nigeria, parents have the most influence. They are seconded



by local and county leaders, officials of the Ministry of Agriculture and Natural Resources, cooperative societies, and Young Farmers Clubs. There are proposals to establish an Agricultural Production Association at state, divisional, district, and county levels in addition to existing 347 Young Farmers Clubs.

Educational Experience. The study showed that all the farmers and their parents attained at least the third grade level in school. The sons had more formal education than the parents. Nigerian farmers are mostly illiterate. There is an infinitesimal number having a kind of informal education. However, more of their children enroll in formal education, but they do not revert to the rural life.

Attitude Toward Farming. The two greatest reasons found keeping farmers on the farm were love for the farm and the desire for independent living. Both factors may hold true in Nigeria but with slight alteration. The desire for independent living or sustenance will precede love for the farm. Under the present conditions, most farmers are tied to the farms as a necessary evil. If anyone leaves the farm, he will hardly get anything to do and he will hardly have any means of subsistence. Thus, most Nigerian farmers stick to the farms to provide sustenance for themselves and individual families. Oyenuga as quoted by Ojo (12) explains better:

So long as agriculture in Nigeria and other parts of West Africa continues to offer no other equipment than a cutlass, a hoe and an axe and for no other reward than merely to keep body and soul together, so long will it continue to offer no attraction to the primary or medium school-leaver, or even to an illiterate young African as a means of livelihood; . . . and so long will the army of the unemployed continue to mount in the towns and cities (p. 72).

## Recommendations of the Study to Improve Farming

### In Nigeria

1. All concerned with molding the lives of young people mainly government, parents, teachers, and organizations should encourage young school leavers with a background in farming to become interested in farming and the related occupations.

2. Awareness of agricultural opportunities and careers would encourage young Nigerians to want to become farmers after their education. The author of this study likes to propose that this recommendation can be achieved through vocational agriculture education.

3. Government's plan to use a higher proportion of her oil revenues to improve Nigeria's most permanent asset--agriculture--should be implemented.

4. Such related organizations as FFA and 4-H Club should be efficiently developed so that young men could grow in creative activities, learn problem solving cooperation and leadership. This aspect is already incorporated in the Basic Core Curriculum.

### General Conclusions of the Study

In order for young Nigerians to show interest and become attracted to farming as a career, school should teach love for the rural area as well as the dignity in working with one's own hands. The rewards in farming should be made compatible to that from other occupations. Finally, financial opportunity for establishment should be available and the drudgery in farming should be greatly reduced through the availability of tractors and other farm machinery.

Another crash program which the author feels to be of interest, relevance, and worth mentioning in this study is the National Food Crops Accelerated Production Campaign in Nigeria. The campaign is aimed at boosting food production. It is a joint scheme between the federal government and all the 12 states of Nigeria. The campaign will last for a seven year period--1973-1980. It is a short term plan.

The objective of the National Accelerated Food Production is to stimulate the masses of Nigerian farmers through the use of high yielding varieties of seed, fertilizer, credit, and other imports to dramatically increase the production of food crops on their own holdings (34). The project will concentrate on rice, cassava, millet, corn, and wheat. The introduction and dissemination of improved seeds into the country and to the farmers will be done by the combined efforts of selected and well trained officers or personnel from the states and federal ministries of agriculture and the research institutions concerned.

The pilot scheme will be executed in two stages. The first stage is a pilot stage which will operate in only three states of the federation, namely Western, Kano, and East Central States. The management lessons or experiences learned in this phase will be useful in establishing a nation wide project in the country's Third Development Plan for 1975-1980. Finally, the results of the campaign will be evaluated annually and changes which seem necessary will be effected so as to insure program continuity at an optimum level of productivity.

The terms of reference for the program which are also important agricultural issues are enumerated as follows (34):

1. Effective national leadership toward developing coordinated plans for expediting agricultural production-distribution guidelines for optimum productivity on a country-wide basis
2. A more positive commitment for parity of opportunity for the farmer, designed to reduce the disadvantaged gap between rural and urban per capita income
3. The availability and effective use of scientific methods of agriculture
4. Adequate agricultural credit, subsidies, institutions, services, and other supporting farm inputs under ministerial guidance all concertedly designed to shift agriculture from a subsistence toward commercial orientation
5. Effective incentives at the farm level for increasing productivity which normally requires strong domestic and export market outlets coupled with some of the items mentioned above

The author feels that this plan will conductively supplement the prime goal of his study. This goal is nothing other than to raise the agricultural (food) production in Nigeria in order to sufficiently feed her increasing population and send surpluses to needy areas. The results and recommendations of this study may take time to be implemented, let alone to bear fruits. But such projects can fill some gaps as well as pave the way for bigger things to come.

Finally, as a matter of critique, if vocational agriculture can effectively be established in the high schools of the State of Oklahoma and in the secondary schools of Tanzania, the author feels there is no reason whatsoever why it cannot be established in the secondary schools of Nigeria and other developing countries as well.

## CHAPTER IV

### PRESENTATION AND ANALYSIS OF DATA

The objective of this chapter is to present and analyze the data accrued from the set of questionnaires returned from the participating teachers. The questionnaire attempts a survey of some concepts and practices in curriculum development and its usage for vocational agriculture. The responses of the participating teachers to the contents of the survey are solicited as well as indicated in the questionnaire. The author assumes outright that these responses are genuine. Therefore, the analysis of the responses is to help to fulfill the purpose and objectives of the study. These are as follows: (1) to review the Oklahoma Basic Core Curriculum for High Schools, (2) to study the development of the curriculum, (3) to look into some concepts and practices of the Basic Core Curriculum, (4) to evaluate the content of materials and sources for supplementation, (5) to determine the acceptance and usage of the Core Curriculum, (6) to examine the possibility of either adopting or modifying the Core Curriculum for secondary schools in Nigeria, (7) to show young Nigerians that agriculture can also be a desirable occupation having features deserving recognition and creating satisfaction and pride. As a matter of fact, most of these objectives have already been dealt with in the previous chapter on the "Review of Literature." Only a few remain to be discussed and substantiated statistically. However, findings of the study relative to the purpose and

objectives of the study are presented in this chapter.

The researcher developed a questionnaire in order to solicit responses on some concepts, practices, and usage of the Basic Core Curriculum for Vocational Agriculture. Another questionnaire was developed by the State Department of Vocational Technical Education. The development of the instrument and the method of data collection were explained in Chapter II on "Methodology." The constitution of the sample (participating teachers) was also explained in the same chapter. Data presented and analyzed as presented in this chapter were gathered from 95 returned questionnaires. All questionnaires (102) were returned, but due to a very slow return, the researcher was advised by his major advisor to include only 95. This constituted 93.14 percent. Therefore, data from the 95 questionnaires were collated, tabulated, presented, and discussed by the researcher in this chapter.

For easy differentiation, the author identifies the two major groups of teachers as follows: Cooperating Teachers (those selected to supervise student teachers)--Group A--and Non-Cooperating Teachers--Group B. The subdivisions of the groups are each assigned a Roman numeral, I and II respectively. Therefore, the groups and subgroups are indicated thus:

Group A-I: Cooperating teachers with more than eight years of teaching

Group A-II: Cooperating teachers with less than eight years of teaching

Group B-I: Non-Cooperating teachers with more than eight years of teaching

Group B-II: Non-Cooperating teachers with less than eight years of teaching

The terms "Cooperating" and "Non-Cooperating" teachers have been briefly explained under "Definition of Terms" in Chapter I.

Responses of Group A-I: Cooperating

Teachers with More Than Eight

Years Teaching Experience

Teacher Responses to Best Description of  
Curriculum

In Table III, there are 22 participants in this group, but number of respondents varied since some of the participants somehow did not check some of the statements. This may be due to oversight, misunderstanding of statement(s) not checked or indifference to the statement(s) such that no particular response could be made. Percentages were based on the number of respondents only. Specifically, one teacher did not check Statements 5, 6, 7, 8, and 9, and one teacher did not check Statements 1 through 8. However, Statement 8 with an average score of 7.20 was ranked first or rated best description of a curriculum. The Statement read that a curriculum is "A course of study." The author expressed surprise in Chapter III with this rating. He also commented that this rating looked rather unprofessional, i.e. a layman's rating. The rating would not be welcomed nor be compatible with the State Department of Vocational and Technical Education. The author would like to repeat that the above definition was taken from Webster's New World Dictionary (25). Statement 4 was rated second best description of a curriculum; it reads: "All the planned learning outcomes for which the school is responsible." The author feels that this rating is somewhat

TABLE III

MEAN RESPONSES INDICATING RANKING OF DESCRIPTIONS OF CURRICULUM

State- ments*	N		%		N		%		N		%		N		%		N		%		Total Re- sponse	Total N. in Group	Average Scores	Rank
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%						
1	2	9.52	2	9.52	1	4.76	5	23.81	1	4.76			2	9.52	2	9.52	2	9.52	4	19.05	21	22	5.81	4
2			2	9.52	3	14.29	1	4.76	5	23.81	1	4.76			3	14.29	5	23.81	1	4.76	21	22	6.05	3
3	1	4.76	1	4.76	2	9.52			8	38.10	1	4.76	4	19.05			3	14.29	1	4.76	21	22	5.71	5
4	2	9.52			1	4.76					3	14.29	5	23.81	5	23.81	4	19.05	1	4.76	21	22	6.86	2
5	6	30.00	5	25.00	4	20.00	1	5.00	2	10.00	2	10.00									20	22	2.70	10
6	3	15.00	6	30.00	2	10.00	2	10.00	1	5.00	3	15.00	1	5.00	1	5.00	1	5.00			20	22	3.80	9
7	1	5.00			3	15.00	5	25.00	1	5.00	4	20.00	2	10.00	3	15.00	1	5.00			20	22	5.30	7
8	2	10.00	1	5.00	1	5.00			1	5.00	2	10.00	2	10.00	2	10.00			9	45.00	20	22	7.20	1
9	5	23.81	2	9.52	2	9.52	1	4.76	2	9.52	2	9.52	2	9.52	2	9.52	2	9.52	1	4.76	21	22	4.71	8
10	1	4.55	3	13.64	2	9.09	6	27.27			2	9.09	1	4.55	2	9.09	2	9.09	3	13.64	22	22	5.45	6

- \* 1. All the learning experiences the students have while attending school.
- 2. The subject matter and activities involved in a specific course or discipline.
- 3. The combination of courses pursued by a student, both required and elective courses.
- 4. All the planned learning outcomes for which the school is responsible.
- 5. A well planned "core" of subject matter concepts and information desirable for the learner, including instructional sequence.
- 6. A well developed series of instructional guides and/or workbooks containing outlines of subject matter to be learned.
- 7. The general overall plan of the content or specific materials for a course of instruction.
- 8. A course of study in a school.
- 9. All instruction which may lead to a productive life as a useful citizen.
- 10. A combination of activities to accomplish greater mental and physical development.



professional and congenial. The statement was given by Popham (22) who has been renowned as a specialist and an architect of curriculum. Curriculum as the author feels, involves some outcomes and experiences as well as changed behaviors during or after a person's school (education) life time. Statement 5 was the least desirable and was rated lowest. It reads: "A well planned 'core' of subject matter concepts and information desirable for the learner, including instructional sequence." The author feels that this description pertains particularly to the Basic Core Guide rather than to curriculum in general. If otherwise, the Curriculum Instructional Materials Center in the State Department of Vocational and Technical Education would be more shocked with this rating than the statement which was rated best. On the other hand, the author assumed that the respondents did not actually understand the statement. Full details are given in Table III.

#### Teacher Responses to Concepts of Curriculum

##### Development as Applied to Vocational

##### Agriculture

The teachers were asked to indicate their respective degree of acceptance of statements regarding curriculum development. These statements and teacher responses are given in Table IV.

In order to arrive at an average score for each statement, numerical values were assigned to the response categories as follows: Strongly Agree--1; Agree--2; Undecided--3; Disagree--4; and Strongly Disagree--5. The numerical values were reversed so as to allow the researcher to sum up all statements. Therefore, a statement which received a low average score would reflect a positive attitude.

TABLE IV  
 MEAN RESPONSES TO CONCEPTS OF CURRICULUM DEVELOPMENT  
 AS APPLIED TO VOCATIONAL AGRICULTURE

Concepts*	SA:1		A:2		U:3		D:4		SD:5		Total Re- sponse	Total N. in Group	Total Scores	Average Scores	Rank
	N	%	N	%	N	%	N	%	N	%					
1			1	4.55			14	63.64	7	31.82	22	22	93.00	4.23	10
2							14	63.64	8	36.36	22	22	96.00	4.36	11
3	8	36.36	14	63.64							22	22	36.00	1.64	1
4	8	36.36	14	63.64							22	22	36.00	1.64	1
5	10	45.45	11	50.00			1	4.55			22	22	36.00	1.64	1
6	1	4.55	19	86.36	2	9.09					22	22	45.00	2.05	5
7	1	4.55	6	27.27	4	18.18	9	49.91	2	9.09	22	22	71.00	3.23	8
8			9	49.91	2	9.09	11	50.00			22	22	68.00	3.09	7
9	1	4.55	16	72.73	2	9.09	3	13.64			22	22	51.00	2.32	6
10			2	9.09	3	13.64	17	77.27			22	22	81.00	3.68	9
11	6	27.27	13	59.09	1	4.55	2	2.09			22	22	43.00	1.95	2

- \* 1. As a teacher, I find I have little time to be concerned about what to teach.  
 2. A good text book and/or workbook is the best source for determining what to teach.  
 3. A good teacher uses all subject matter as a vehicle for preparing the learning for "making decisions."  
 4. The curriculum should reflect the needs and concerns of the society (community) in which the learner lives.  
 5. The curriculum and/or learning experience must include a maximum amount of experimental learning, i.e. "learning by doing."  
 6. Subject matter in the curriculum is best presented through a performance objective approach.  
 7. Final decision on curriculum should be made by the teacher without any influence, i.e. principals, school districts, school department chairmen, curriculum guides.  
 8. The teacher and the learner should have free choice in curriculum development.  
 9. Best sources of objectives for developing a curriculum are the learner, the society, and the subject matter.  
 10. Objectives for instruction should largely be developed soon after the first few days of classwork.  
 11. Objectives for instruction should be developed well in advance of the beginning of the school term.

There was a full response as every participating teacher responded to each statement. Total number of participants equalled total number of respondents.

Statements 3, 4, and 5 were accepted best and were tied in the first position. These statements were as follows: 3--"A good teacher uses all subject matter as a vehicle for preparing the learning for 'making decisions'"; 4--"The curriculum should reflect the needs and concerns of the society (community) in which the learner lives"; 5--"The curriculum and/or learning experience must include a maximum amount of experiential learning, i.e. 'learning by doing.'"

The author was pleased with these choices, especially Statements 4 and 5. The former statement embodied one of the true sources for curriculum development, i.e. "the society" as given by Popham (22). But then it was most surprising that Statement 9 which contained all the three sources for curriculum development was not given a better rating. In fact, it should have been ranked first or among the best rather than being ranked sixth. The latter statement, i.e. 5, embodied the important principle of application as stressed by both John Dewey and Thorndike. As a matter of fact, application was among the laws of learning postulated by Thorndike. These are also known as Herbatian Steps of Teaching. The whole laws were preparation, presentation, application, and testing. After an instruction was prepared and presented, students should be provided the opportunity to apply the theories of the instruction. This would make better impressions in the minds of the students so as to conform to the wise saying that "What we hear, we forget, but what we do, we remember." Application would also help to demonstrate achievement of the performance objective (expected behavioral change)

for the instruction.

For Statement 11--"Objectives for instruction should be developed well in advance of the beginning of the school term"--was rated second best by the respondents. Strictly speaking, this concept would not hold true as many authorities suggested that students should be involved in determining objectives for instruction. Again, it would be better, safe and effective to consider the target population of students before developing such objectives. Mager (35) states the following:

. . . And the nature of the persons accepted for the course will have an effect on the design of instruction. It is time, therefore, to specify the prerequisite behaviours that will be required for entry into the course. But the statement of objectives is the key document to performance of all the remaining steps of course development. It is the blueprint describing the skills and performances we hope to achieve in our students. It is a description of the goal we intend to reach. Unless we know precisely where we are going, we might wind up someplace else . . . and never even know it (p. 34).

From the target population, the substance of the course is derived by subtracting what the student is already able to do from what you want him to be able to do. Target population capitalizes on the physical characteristics, educational levels and cultural background of students. Therefore, the ideal situation would be that objectives for instruction should largely be developed soon after the first few days of classwork as in Statement 10. However, Mager (35) balances the situation thus: "Objectives are written before the course is prepared, but they are continually modified as experience reveals gaps, unrealistic expectations or other ways in which they may be improved" (p. 34).

Statement 2--"A good textbook and/or workbook is the best source for determining what to teach"--was ranked lowest. This low rating of textbooks corresponded somewhat with another low ranking of textbooks

among sources for supplementation.

Teacher Responses to Approximate Percent of  
Time Curriculum Is Followed in Present  
Teaching

In general, most teachers or at least more than half of the teachers indicated that they were spending 51 to 75 percent of their time using each of the Basic Core Curriculums in their teaching. Therefore, it could be concluded that the Core Curriculum accounted for 60 percent of an instructor's time in teaching vocational agriculture. Patton (24) had similar results in his studies. According to Tuttle (36), this is the percent target the curriculum has been designed to meet. The remaining 40 percent is left to the instruction for local community work.

TABLE V  
RESPONSES AS TO APPROXIMATE PERCENT OF TIME CURRICULUM  
IS FOLLOWED IN PRESENT TEACHING

Core Curric.	Less Than				More Than				Total Re- sponse	Total N. in Group
	10- 10%	10- 25%	26- 50%	51- 75%	75%	75%	75%	75%		
	N	%	N	%	N	%	N	%		
Vo Ag I			2	9.09	19	86.36	1	4.55	22	22
Vo Ag II			2	9.09	19	86.36	1	4.55	22	22
Vo Ag III			2	22.73	16	72.73	1	4.55	22	22
Vo Ag IV			8	38.10	13	61.90			21	22
Ag Mech			2	15.38	3	23.08	8	61.54	13	22

Note: 1 teacher did not check Vo Ag IV.  
9 teachers did not check Ag Mech.  
Percentages were based on total response.

Teacher Responses to Relevancy of the CoreMaterials by Years

TABLE VI  
 RESPONSES TO RELEVANCY OF THE CORE MATERIALS BY YEARS

Core Curric.	Year 1		Year 2		Year 3		Year 4		Total Re- sponse	Total N. in Group
	M* Too Ad- vanced N	%	M Too Easy N	%	M Not Rele- vant N	%	M Very Rele- vant N	%		
Vo Ag I							22	100.00	22	22
Vo Ag II			1	4.76			21	95.45	22	22
Vo Ag III	2	10.00					18	95.00	20	22
Vo Ag IV	1	5.00					19	95.00	20	22
Ag Mech							12	100.00	12	22

Note: \*Materials  
 2 teachers did not check Vo Ag III.  
 2 teachers did not check Vo Ag IV.  
 10 teachers did not check Ag Mech.  
 Percentages were based on total response.

Most teachers indicated that the materials of the entire curricula for vocational agriculture were very relevant at Year 4. One teacher indicated, however, that at Year 2, Vocational Agriculture II materials were too easy. But that response should be too insignificant to be noted. Two teachers showed that the materials in Vocational Agriculture III were too advanced at Year 1. Similarly, one teacher indicated that Vocational Agriculture IV materials were too advanced at Year 1. These

responses should also be insignificant. None of the teachers gave any indication on whether core materials were not relevant. The author, therefore, assumed that the entire Basic Core Curricula were serving the needs of both instructors and students. Also, the materials were adequate for teaching agricultural programs. Consequently, this kind of curriculum development should continue for developing units of instruction in vocational agriculture. As these teachers came from different parts of Oklahoma, their responses indicated that the Basic Core Curriculum could be adapted to each vocational agriculture teacher's local community. This feature should be encouraging to the purpose and objectives of the author's study.

Teacher Responses to Evaluation of Certain Items  
in Terms of Format of Units of Instruction

In Table VII, teachers were asked to evaluate certain items in the format of the instructional units. They should indicate their feelings on each of the items of the format. Response categories with numerical values were drawn up as follows: Very High--5; High--4; Moderate--3; Low--2; and Very Low--1. All participating teachers responded to each item accordingly.

Most teachers evaluated Item 3--"Specific Objectives"--as the best. Items 1 and 5--"General Objectives" and "Instructional Materials"--respectively were second best. Item 2--"Terminal Objectives"--was third best. Item 4--"Suggested Activities"--was ranked last in the evaluation. This evaluation nearly corresponded with the sequence of writing a unit of instruction as recommended by Dr. Clifton "Pete" Braker (36) of the State Department of Vocational and Technical Education, Stillwater.

TABLE VII

## RESPONSES TO EVALUATION OF CERTAIN ITEMS IN TERMS OF FORMAT OF UNITS OF INSTRUCTION

Terms	Very High 5		High 4		Moderate 3		Low 2		Very Low 1		Total Re- sponse	Total N. in Group	Total Scores	Average Scores	Rank
	N	%	N	%	N	%	N	%	N	%					
1. General Objectives	4	18.18	16	72.73	2	9.09					22	22	90	4.09	2
2. Terminal Objectives	4	18.18	15	68.18	3	13.64					22	22	89	4.05	3
3. Specific Objectives	7	31.82	11	50.00	4	18.18					22	22	91	4.14	1
4. Suggested Activities			11	50.00	11	50.00					22	22	77	3.50	6
5. Instructional Materials	2	9.09	14	63.64	5	22.73	1	4.55			22	22	83	3.77	4
6. Information Sheet	5	22.73	14	63.64	3	13.64					22	22	90	4.09	2
7. Quiz	4	18.18	7	31.82	9	49.91	2	9.09			22	22	79	3.59	5



Dr. Braker (36) recommended this sequence in constructing a unit of instruction: Specific Objectives, Information Sheet, Assignment Sheet, Job Sheet, Test, Answers to Test, Suggested Activities, Terminal Objectives, and General (Performance) Objectives. According to him, a teacher should first of all spell out what he would like his students to be able to do during and after instruction. The teacher should then proceed to develop information sheet, assignment sheet, job sheets, test, answers, suggested activities, and terminal objectives which mark the end of instruction as well as evaluate instruction.

Teacher Responses to the Time Curriculum Should  
Be Revised

TABLE VIII  
RESPONSES TO THE FREQUENCY CURRICULUM SHOULD BE REVISED

Periods	N	%	Total Respondents	Total in Group
3 Years	3	13.64	22	22
5 Years	4	18.18	22	22
8 Years				
10 Years				
Whenever Necessary	15	68.18	22	22

All the participating teachers responded. Of the 22 teachers, 15 teachers, i.e. 68.18 percent did not select any of the specific methods given but rather indicated that curriculum should be revised whenever necessary. The researcher shared this response and he also considered it a wise choice as well as non-committal. Curriculum revision should not be within any time limits but should depend on emerging situations and needs emanating from any or all of the three sources (student, subject matter, and society) for curriculum objectives. For instance, John Dewey (29) pointed out that social change necessitated educational changes. Although a curriculum is like a gospel, yet it should be flexible and subject to changes or revision whenever deemed necessary so as to continually meet desirable needs and circumstances. After all, revision does not necessarily involve basic changes but just a few updatings and/or refinements of the original materials. Four teachers selected the Five Year Period while three teachers responded to the Three Year Period. There was no response to the Eight Year and Ten Year Periods.

#### Teacher Responses as to Percent of Core Units

##### Needing Supplementation

Responses on this aspect of supplementation were varied such that it would be difficult to determine a consensus on any of the percentages shown in Table IX. It became even more complex as some number of teachers selected two different percentages: six teachers indicated 11 to 25 percent and another group of six teachers indicated 41 to 60 percent. However, the author would tend to think that little supplementation, about 11 to 25 percent, would be needed. This percentage would be

distributed accordingly in motivation, localizing, personalizing, and use of supplements, e.g. farm magazines, resource persons, slides, and other visual aids. The Core Units are in most cases self-sufficient; hence, they are widely accepted and extensively used by most teachers. In fact, the Core Units were designed to provide ready instruction with or without any supplementation. Hence, the Core Units solved the common problem (what to teach) most vocational agriculture teachers used to have.

TABLE IX  
RESPONSES AS TO PERCENT OF CORE UNITS NEEDING SUPPLEMENTATION

Percentages	N	%	Total Respondents	Total in Group
Less Than 10				
11 to 25	6	27.27	22	22
26 to 40	5	22.73	22	22
41 to 60	6	27.27	22	22
61 to 80	4	18.18	22	22
More Than 80	1	4.55	22	22

Teacher Responses as to Extent More Suggestions  
for Variation in Teaching Methods Are Needed

Of the 22 teachers who responded to suggestions for variation, 16 of them, i.e. 72.73 percent indicated that some variation in teaching

methods were needed. Only four teachers, as shown in Table X, indicated that much variation was needed. Responses centered only between much need and some need for varying the teaching methods. None of the teachers indicated if there was very much need for variation. One teacher, however, showed that there was no need to vary the teaching methods. This particular teacher might be a static conservative and not moving with time. The author was of the opinion that varying teaching methods accordingly would be motivating and would involve personalizing and to some extent localizing too. All these would consequently facilitate learning. Therefore, some variation from time to time of the teaching methods would be needed so as to keep students motivated and interested rather than bored and stranded.

TABLE X  
RESPONSES AS TO THE EXTENT MORE SUGGESTIONS FOR VARIATION  
IN TEACHING METHODS ARE NEEDED

Response Categories	N	%	Total Respondents	Total in Group
Very Much				
Much	4	18.18	22	22
Some	16	72.73	22	22
A Little	1	4.55	22	22
None	1	4.55	22	22

Teacher Responses to Rating of Sources for  
Supplementation

In Table XI, the participating teachers were asked to rate some sources for supplementation in teaching. The rating scale was given as follows: Very Good--5; Good--4; Average--3; Fair--2; Poor--1.

In general, all teacher rated each source, except that eight teachers did not check Source No. 11. The average scores ranged from 4.82 to 3.64.

Source No. 3--"Resource Persons"--with an average score of 4.82, was rated the best of all. "Individualizing Through Student Experience," i.e. Source No. 10, was rated second best. "Individualizing Through Community Visits," i.e. Source No. 9, was ranked third. Source No. 6--"Recordings"--was least rated. The author shared the highest rating given to "Resource Persons" because of the expertise they could bring to the classroom for the benefit of students and sometimes the teacher inclusive. Resource persons have a special role to play and special gaps to fill both of which the teacher may not be able to do efficiently. But there are specific problems with resource persons. They are not always readily available. They need to be given a far advanced notice. The procedure to get them is somewhat cumbersome and their coming involves strenuous preparation, orientation, and in some cases some rehearsing. The author could not help being amazed by the low rating of "Farm Magazines," which should be up-to-date and readily available sources for supplementation. But the researcher was also pleased with the high rating given to "Individualizing Through Student Experience." Indeed, this source facilitates localizing as well as participation.

TABLE XI  
RESPONSES TO RATING OF SOURCES FOR SUPPLEMENTATION

Sources	Very Good 5		Good 4		Average 3		Fair 2		Poor 1		Total Re- sponse	Total N. in Group	Average Scores	Rank
	N	%	N	%	N	%	N	%	N	%				
1. Farm Magazines	8	36.36	7	31.82	6	27.27	1	4.55			22	22	4.00	8
2. Up-To-Date Textbooks	6	27.27	12	54.55	3	13.64	1	4.55			22	22	4.05	7
3. Resource Persons	18	81.81	4	18.18							22	22	4.82	1
4. Films and/or Video Tapes	12	54.55	8	36.36	1	4.55	1	4.55			22	22	4.41	6
5. Slides	12	54.55	9	49.91			1	4.55			22	22	4.45	5
6. Recordings	5	22.73	7	31.82	7	31.82	3	13.64			22	22	3.64	10
7. Photographs	6	27.27	9	49.91	5	22.73	2	9.09			22	22	3.86	9
Individualize Through:														
8. Teacher Personal Experience	11	50.00	10	45.45	1						22	22	4.45	5
9. Community Visits	12	54.55	10	45.45							22	22	4.55	3
10. Student Experience	17	77.27	4	18.18			1	4.55			22	22	4.68	2
11. Fact Sheets	8	57.14	5	35.14	1	7.14					14	22	4.50	4

## Teacher Responses on Units in Vo-Ag Basic

### Core Curriculum I

In general in Table XII, the teachers indicated that they taught most of the units. This response should mean general acceptance of the units. The least taught units as indicated by 15 teachers were Unit IV--"Fasteners"--and seconded by Unit III--"Metal Work"--indicated by eight teachers. Both units were in Section F--"Agricultural Mechanics." The reasons given for not teaching these units were these: "Facilities and Equipment Unavailable," "Not Enough Time," "Not Needed in My Community," and "Others"--unspecified. For further details, see Table XII. The author observed that most of the teachers did not seem to care to discuss initially "Areas of Instruction." It appeared that they directly started with the units. Table XII shows that most of the teachers did not respond to the selection of the curriculum as they responded to the units. The author feels that this malpractice or oversight should be brought to the attention of the teachers for correction. The author would suppose that discussing the "Areas of Instruction" prior to the "Units of Instruction" would be a kind of introduction to the general subject matter. Again, the "General Objectives" can be discussed in the "Areas of Instruction" since both the "Terminal and Specific Objectives" are respectively discussed in the "Units of Instruction."

## Teacher Responses on Units in Vo-Ag Basic

### Core Curriculum II

Most units, as indicated by the respondents in Table XIII, were generally accepted and taught, more especially units in Section E--

**TABLE XII**  
**RESPONSES TO UNITS IN VO-AG BASIC CORE CURRICULUM I**

Section and Unit Number	No Response	Unit Taught		Reasons Unit Not Taught						
		Yes	No	No Knowledge	Content Too Deep	Facilities Equipment Limited	Little Time	Little Need	Too Elementary	Other
<b>Section A - Orientation &amp; Careers:</b>	14	8								
I - Orientation to Vocational Agriculture		22								
II - Careers in Agriculture	3	19								
<b>Section B - Leadership:</b>	15	7								
I - Introduction to Future Farmers of America		21	1							1
II - Duties & Responsibilities of FFA Members		22								
III - Parliamentary Procedure and Public Speaking		22								
<b>Section C - Supervised Experience Programs:</b>	5	17								
I - Planning and Implementing the Supervised Occupational Experience Program	1	21	1							1
<b>Section D - Animal Science:</b>	17	5								
I - The Livestock Industry		21	1							1
II - Breeds of Livestock		22								
III - Livestock Selection		22								
IV - Livestock Feeding		22								
<b>Section E - Plant and Soil Science:</b>	16	5								1
I - Plant and Soil Science	1	19	2							2
<b>Section F - Agricultural Mechanics:</b>	15	6	1							1
I - Orientation and General Safety		21	1							1
II - Arc Welding	1	20	1							1
III - Metal Work		14	8							1
IV - Introduction to Oxyacetylene Cutting		20	2			1	6			1
V - Oxyacetylene Cutting		20	2							2
VI - Fasteners	1	6	15							2
VII - Farm Safety		21	1			2	8	2		3
										1



"Animal Science"-- and units in Section B--"Leadership." Of the 22 respondents, 13 indicated they did not teach Unit IX which is "Landscaping" in Section D--"Plant and Soil Science." Reasons checked were "No Knowledge of Subject" by one teacher; "Content Too Deep" by one teacher; "Facilities and Equipment Unavailable" by one teacher; "Not Enough Time" by six teachers; "Not Needed in My Community" by two teachers; and "Others" by two teachers. The second least taught units were Unit I as indicated by 12 teachers and Unit V again checked by 12 teachers. Both units were in Section F--"Agricultural Mechanics." They were "Blueprint Reading" and "Wood Fasteners," respectively. Again, the sections ("Area of Instruction") were not well responded to. The author made some comments earlier about it. For further details, see Table XIII.

#### Teacher Responses on Units in Vo-Ag Basic

##### Core Curriculum III

The respondents indicated that they taught most of the units, particularly those units in Section B--"Animal Science"--and Section D--"Leadership." Those units were shown to be heavily taught by the teachers. The least taught units were Unit VII--"Brush Painting"--and Unit V--"Electric Motors." Both of these units were in Section F--"Agricultural Mechanics." Reasons checked against Unit VII were "Facilities and Equipment Unavailable" by one teacher; "Not Enough Time" by five teachers; "Not Needed in My Community" by two teachers; and "Others" by five teachers. Reasons checked for not teaching Unit V were "No Knowledge of Subject" by three teachers; "Facilities and Equipment Unavailable" by one teacher; "Not Enough Time" by four teachers; "Not Needed in My Community" by one teacher; and "Others" by three teachers. Of the 22

TABLE XIII

## RESPONSES TO UNITS IN VO-AG BASIC CORE CURRICULUM II

Section and Unit Number	No Response	Unit Taught		Reasons Unit Not Taught						
		Yes	No	No Knowledge	Content Too Deep	Facilities Equipment Limited	Little Time	Little Need	Too Elementary	Other
Section A - Agricultural Chemicals:	14	8								
I - Agricultural Chemicals		20	2							2
Section B - Leadership:	13	9								
I - Future Farmers of America		20	2							2
II - Becoming a Good Leader		20	1							1
Section C - Supervised Farm Training:	18	4								
I - Analysis and Evaluation of Supervised Farm Training Program	1	18	3							2
II - Farm Credit	3	17	2				1			2
Section D - Plant & Soil Science:	17	4	1							1
I - Elementary Study of Soils	1	20	1							1
II - Soil Conservation Practices	1	20	1							1
III - Plant Growth & Reproduction	1	19	2							1
IV - Seed Selection		16	6	1			1			1
V - Land Preparation	1	16	5				3	1		2
VI - Chemical Weed Control		18	4				2		1	2
VII - Plant Insect Control		19	3		1		1			1
VIII - Plant Diseases		14	8		1		1			1
IX - Landscaping	2	7	13	1	1	1	6	2		2
Section E - Animal Science:	18	4								
I - Animal Nutrients	1	21								
II - Composition and Classification of Feeds		22								
III - Animal Digestion		22								
IV - Maintaining Animal Health		22								
V - Diseases		22								
VI - Parasites		22								
Section F - Agricultural Mechanics:	19	2	1							1
I - Blueprint Reading		10	12	2		1	5			4
II - Position Welding		21	1							1
III - Oxyacetylene Fusion Welding		19	3			1				2
IV - Oxyacetylene Brazing		19	3			1				2
V - Wood Fasteners	3	7	12			2	6	1		3
VI - Figuring Bills of Materials	1	16	5				1			4
VII - Introduction to Plumbing		11	11	1		2	3	1		4

participants, there were 21 respondents as one teacher did not check any section or unit. Full details are shown in Table XIV.

Teacher Responses on Units in Vo-Ag Basic

Core Curriculum IV

Of the 22 participants in this group, there were 20 respondents. Two teachers did not respond at all to the section and units in Vo-Ag IV. However, the respondents indicated that most of the units were taught. It would not be easy and safe to pin point units heavily taught. But the least taught units in Section D--"Agricultural Mechanics"--were Unit IX--"Ignition System"--as indicated by 13 teachers; Unit I--"Building Farm Fences"; Unit II--"Rafter Framing"; Unit VIII--"Servicing the Tractor-Fuel System"; and Unit X--"Servicing the Tractor-Cooling System," as each was indicated by ten teachers. The reasons checked against all the units were common and were as follows: "No Knowledge of Subject," "Facilities and Equipment Unavailable," "Not Enough Time," and "Others." Full data shown in Table XV.

Responses of Group A-II: Cooperating

Teachers with Less Than Eight

Years Teaching Experience

Teacher Responses to Best Description of a

Curriculum

All the participating teachers responded to each statement about the best description of a curriculum. Therefore, the number of participants equalled the number of respondents. The average scores ranged

TABLE XIV

RESPONSES TO UNITS IN VO-AG BASIC CORE CURRICULUM III

Section and Unit Number	No Response	Unit Taught		Reasons Unit Not Taught						
		Yes	No	No Knowledge	Content Too Deep	Facilities Equipment Limited	Little Time	Little Need	Too Elementary	Other
<b>Section A - Plant and Soil Science:</b>										
I - Marketing Crops	18	1	2							2
II - Fertilizer		16	5	1			1	1		2
III - Improving Native Rangeland		19	2							2
IV - Establishing & Improving the Pastures		16	5				1	2		2
		17	4				1	1		2
<b>Section B - Animal Science:</b>										
I - Reproductive Organs of Farm Animals	17	3	1							
II - Collecting and Examining Semen		19	2	1						1
III - Artificial Insemination		15	6	1		2	2			1
IV - Fertility & Pregnancy Testing	1	16	5	1		1	2			1
V - Market Grades & Classes of Livestock		13	7	1			3			1
VI - Marketing Livestock & Market Agencies		20	1							1
VII - Livestock Price Trends & Cycles	1	18	3							1
VIII - Selecting & Breeding Livestock		17	3							1
		20	1							1
<b>Section C - Supervised Training Program</b>										
Farm Business Management:	16	3	2							2
I - Analysis & Evaluation of Super- vised Farm Training Program	2	15	4				1			3
II - Acquisition of Farm Land		18	3				2			1
III - Budgeting		17	4				3			1
<b>Section D - Leadership:</b>										
I - Importance of Public Speaking	17	3	1							1
II - Developing and Delivering a Speech		19	2							2
		19	2							2
<b>Section E - Career Selection:</b>										
I - Career Selection	16	4	1							1
II - Human Relations	1	19	1				3			1
		1	16	4						1
<b>Section F - Agricultural Mechanics:</b>										
I - Fundamentals of Electricity	17	2	2							2
II - Electrical Safety		16	5	1			1			3
III - Electrical Wiring Practices		17	4	1						3
IV - Planning the Wiring Layout		15	6	1			1	1		3
V - Electric Motors		13	8	1			3	1		3
VI - Using the Farm Level		9	12	3		1	4	1		3
VII - Brush Painting		18	3				1			2
VIII - Engine Operation		8	3				5	2		5
IX - Servicing Small Engines		11	10	1			3	1		4
		12	9				2	2		4

TABLE XV

RESPONSES TO UNITS IN VO-AG BASIC CORE CURRICULUM IV

Section and Unit Number	No Response	Unit Taught		Reasons Unit Not Taught						
		Yes	No	No Knowledge	Content Too Deep	Facilities Equipment Limited	Little Time	Little Need	Too Elementary	Other
<b>Section A - Supervised Training Program</b>										
Farm Business Management:	14	4	2				1			1
I - Farm Records - Farm Inventories		13	2				1			1
II - Farm Records - Net Worth Inventories		18	2				1			1
III - Financing the Farm Business: Sources of Credit		19								1
IV - Insurance		15	5	1			3			1
V - Tax Management		14	6		1		2			1
VI - Machinery & Equipment Management	3	14	3		1		1			1
VII - Custom Services Versus Ownership		18	2				1			1
VIII - Analysis & Evaluation of Supervised Farm Training Program	1	17	2							1
<b>Section B - Leadership &amp; Careers:</b>										
I - Developing the FFA Program of Activities	16	3	1							1
II - Young Farmer Association of Oklahoma	1	16	3							3
III - Selecting a Career	1	11	8				4			4
		18	2							2
<b>Section C - Plant &amp; Soil Science:</b>										
I - Land Judging	16	2	2							2
II - Soil Sampling		15	5							5
III - Soil Survey Reports & Legal Land Description		15	5				1			4
IV - Soil Conservation Service & Conservation Districts		16	4				1			3
V - Agriculture Stabilization & Conservation Service	1	14	5				2			3
	1	13	6				3			3
<b>Section D - Agricultural Mechanics:</b>										
I - Building Farm Fences	15	2	3							3
II - Rafter Framing		12	8			1	3			4
III - Farm Utility Buildings		10	10			1	5			4
IV - Servicing the Tractor Air Supply System		16	15				6			4
V - Servicing Wheel Bearings		12	8	1		1	3			3
VI - Battery Service		12	8			1	3			4
VII - Servicing the Tractor Lubrication System		12	8	1			2			4
VIII - Servicing the Tractor-Fuel System		10	10	1			4			4
IX - Ignition System		7	13	1		2	5			5
X - Servicing the Tractor Cooling System		10	16	1			3			4
XI - Spray Painting		13	7			1	2			4

from 1.77 to 8.85.

In Table XVI, Statement 8 with the highest average score of 8.85 ranked first and best rated. The statement reads: "A course of study in a school." This rating corresponded with the rating in Group A-I. However, this choice looked unprofessional. Statement No. 1 which reads "All the learning experiences the students have while attending school" was ranked second best. In Group A-I, Statement 4 was second best. However, the author felt that both statements were nearly the same in content. Both showed concern and some changes of behavior anticipated in the students during or after school. Again, the author felt that should be ranked first. Statement 4--"All the planned learning outcomes for which the school is responsible"--was rated third. The least rated statement with average score of 1.77 was Statement No. 5: "A well planned 'core' of subject matter concepts and information desirable for the learner, including instructional sequence." Again, this rating corresponded with the rating in Group A-I. The author feels that this statement refers more to the Core Guide than to a general curriculum. Otherwise, respondents did not clearly grasp the content of the statements. See full details in Table XVI.

#### Teacher Responses to Concepts of Curriculum

##### Development as Applied to Vocational

##### Agriculture

The teachers' responses were solicited as to their degree of acceptance of some concepts of curriculum development. Degree of acceptance would be indicated on the scale given: Strongly Agree--1; Agree--2; Undecided--3; Disagree--4; Strongly Disagree--5. The numerical values

TABLE XVI

MEAN RESPONSES INDICATING RANKING OF DESCRIPTIONS OF CURRICULUM

State- ments*	N		%		N		%		N		%		N		%		N		%		Total Re- sponse	Total N. in Group	Average Scores	Rank
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%						
1					2	15.38	1	7.69	2	15.38			2	15.38	1	7.69	5	38.46	13	13	7.69	2		
2					2	15.38	1	7.69	2	15.38	2	15.38	3	23.08	2	15.38	1	7.69		13	13	6.00	5	
3					2	15.38	1	7.69	4	30.78	1	7.69	2	15.38	1	7.69	1	7.69	1	7.69	13	13	5.92	6
4					1	7.69					3	23.08	3	23.08			6	46.15		13	13	7.46	3	
5	8	61.54	2	15.38	2	15.38			1	7.69										13	13	1.77	10	
6	1	7.69	7	53.85			2	15.38			1	7.69	1	7.69	1	7.69				13	13	3.88	9	
7	1	7.69	2	15.38	5	38.46	1	7.69	1	7.69			1	7.69	2	15.38				13	13	4.00	7	
8											1	7.69	1	7.69	3	23.08	2	15.38	6	46.15	13	13	8.85	1
9			1	7.69	1	7.69	1	7.69	2	15.38	1	7.69	2	15.38	2	15.38	2	15.38	1	7.69	13	13	6.38	4
10	3	23.08	1	7.69	1	7.69	4	30.78	2	15.38	2	15.38								13	13	3.54	8	

- \* 1. All the learning experiences the students have while attending school.
- 2. The subject matter and activities involved in a specific course or discipline.
- 3. The combination of courses pursued by a student, both required and elective courses.
- 4. All the planned learning outcomes for which the school is responsible.
- 5. A well planned "core" of subject matter concepts and information desirable for the learner, including instructional sequence.
- 6. A well developed series of instructional guides and/or workbooks containing outlines of subject matter to be learned.
- 7. The general overall plan of the content or specific materials for a course of instruction.
- 8. A course of study in a school.
- 9. All instruction which may lead to a productive life as a useful citizen.
- 10. A combination of activities to accomplish greater mental and physical development.

were reversed so as to allow the researcher to sum up the concepts. Therefore, a concept which received a low average score would reflect a positive response.

All the participating teachers responded to all concepts. Concept No. 5--"The curriculum and/or learning experiences must include a maximum amount of experiential learning, i.e. 'learning by doing'"--with the least average score of 1.15 was most accepted. In Group A-I, this concept was also rated the best. The author already commented on this rating while analyzing the same data in Group A-I. Concept No. 3--"A good teacher uses all subject matter as a vehicle for preparing the learning for 'making decisions'"--with average score of 1.31 was indicated more accepted. In Group A-I, this concept was among the three Concepts--3, 4, and 5--which tied as the most accepted concepts. The author felt that this concept was clear cut and did not require any supporting discussions or arguments. The third accepted concept was Concept No. 4: "The curriculum should reflect the needs and concerns of the society (community) in which the learner lives." As indicated earlier, in Group A-I, this concept and two others were rated as most accepted. Thus, while Concepts 3, 4, and 5 were lumped together as most accepted in Group A-I, these same concepts were spread as first, second, and third choices in Group A-II. This indicated a kind of consensus or unanimity between both groups. The author felt that this should be the situation as both groups were essentially the same in nature, i.e. they consisted of cooperating teachers. Concept 1--"As a teacher, I find I have little time to be concerned about what to teach"--with an average score of 4.54 was the least accepted. The author felt that this concept should not, in a sense, be a concept for curriculum development but rather a problem



TABLE XVII  
 MEAN RESPONSES TO CONCEPTS OF CURRICULUM DEVELOPMENT AS  
 APPLIED TO VOCATIONAL AGRICULTURE

Concepts*	SA:1		A:2		U:3		D:4		SD:5		Total Re- sponse	Total N. in Group	Total Scores	Average Scores	Rank
	N	%	N	%	N	%	N	%	N	%					
1							6	46.15	7	53.85	13	13	59.00	4.54	11
2	1	7.69	1	7.69			7	53.85	4	30.77	13	13	51.00	3.92	10
3	9	69.23	4	30.77							13	13	17.00	1.31	2
4	8	61.50	5	38.46							13	13	18.00	1.39	3
5	11	84.62	2	15.38							13	13	15.00	1.15	1
6	1	7.69	9	69.23	1	7.69	2	15.38			13	13	30.00	2.31	6
7	1	7.69	2	15.38			6	46.15	4	30.77	13	13	49.00	3.77	9
8	1	7.69	5	38.46	5	38.46	2	15.38			13	13	34.00	2.62	7
9	3	23.08	9	69.23	1	7.69					13	13	24.00	1.85	4
10	1	7.69	9	69.23	2	15.38	1	7.69			13	13	29.00	2.23	5
11	1	7.69	7	53.85	1	7.69	4	30.77			13	13	34.00	2.62	7

- \* 1. As a teacher, I find I have little time to be concerned about what to teach.
- 2. A good text book and/or workbook is the best source for determining what to teach.
- 3. A good teacher uses all subject matter as a vehicle for preparing the learning for "making decisions."
- 4. The curriculum should reflect the needs and concerns of the society (community) in which the learner lives.
- 5. The curriculum and/or learning experience must include a maximum amount of experimental learning, i.e. "learning by doing."
- 6. Subject matter in the curriculum is best presented through a performance objective approach.
- 7. Final decision on curriculum should be made by the teacher without any influence, i.e. principals, school districts, school department chairmen, curriculum guides.
- 8. The teacher and the learner should have free choice in curriculum development.
- 9. Best sources of objectives for developing a curriculum are the learner, the society, and the subject matter.
- 10. Objectives for instruction should largely be developed soon after the first few days of classwork.
- 11. Objectives for instruction should be developed well in advance of the beginning of the school term.

for curriculum development to solve. It should be recalled that the Basic Core Curriculum Guide was developed essentially so as to solve the common problem of what to teach which used to beset most vocational agricultural teachers. Therefore, this rating would be ideal.

Teacher Responses as to Approximate Percent of  
Time Curriculum Is Followed in Present  
Teaching

TABLE XVIII  
 RESPONSES AS TO APPROXIMATE PERCENT OF TIME CURRICULUM  
 IS FOLLOWED IN PRESENT TEACHING

Core Curric.	Less Than 10%		10- 25%		26- 50%		51- 75%		More Than 75%		Total Re- sponse	N. in Group
	N	%	N	%	N	%	N	%	N	%		
Vo Ag I					2	18.18	8	72.73	1	9.09	11	13
Vo Ag II					2	16.67	9	75.00	1	8.33	12	13
Vo Ag III					6	50.00	6	50.00			12	13
Vo Ag IV			1	8.33	5	41.67	6	50.00			12	13
Ag Mech			2	33.33	3	50.00	1	16.67			6	13

Note: 2 teachers did not check Vo Ag I.  
 1 teacher did not check Vo Ag II.  
 1 teacher did not check Vo Ag III.  
 1 teacher did not check Vo Ag IV.  
 7 teachers did not check Ag Mech.  
 Percentages were based on total response.

Of the 11 respondents, eight indicated that 51 to 75 percent of the time was spent in Vocational Agriculture I. Only two teachers indicated less this percentage while only one teacher indicated that more than 75 percent time was used in Vocational Agriculture I. However, in case, except for Agricultural Mechanics, more than half of the respondents showed that 51 to 75 percent of teaching time was spent on the Basic Core Curriculum. As for Agricultural Mechanics, consensus was on 26-50 percent. In any case, it could still be concluded that the Core Curriculum was accounting for 60 percent of the instructor's time as it was designed to meet. This result was the same in Group A-I as well as confirmed by Patton (24).

TABLE XIX  
RESPONSES TO RELEVANCY OF CORE MATERIALS BY YEARS

Core Curric.	Year 1		Year 2		Year 3		Year 4		Total Re- sponse	Total N. in Group
	M* Too Ad- vanced N	%	M Too Easy N	%	M Not Rele- vant N	%	M Very Rele- vant N	%		
Vo Ag I							12	100.00	12	13
Vo Ag II			2	15.38			11	84.62	13	13
Vo Ag III	1	9.09			1	9.09	9	81.82	11	13
Vo Ag IV	2	15.38			1	7.69	10	76.92	13	13
Ag Mech							5	100.00	5	13

Note: \* Materials

1 teacher did not check Vo Ag I.

2 teachers did not check Vo Ag III.

8 teachers did not check Ag Mech.

Percentages were based on total response.

Despite the varying responses, most of the respondents indicated unanimously that the core materials were very relevant, especially in Vocational Agriculture I. This finding was true in Group A-I. Two teachers, however, indicated that Vocational Agriculture II materials were too easy at Year 2. This variation should not be significant. Other insignificant variations were as follows: in Vocational Agriculture III, one teacher indicated the core materials were too advanced at Year 1, while another teacher indicated that the materials were not relevant. In Group A-I, two teachers indicated Vocational Agriculture III materials were too advanced at Year 1. In Vocational Agriculture IV, two teachers showed that materials were too advanced at Year 1, while one teacher showed the materials were not relevant at Year 3. In contrast two teachers indicated that Vocational Agriculture II materials were too easy at Year 2. In Group A-I, one teacher made a similar response. But that should be an insignificant indication.

Teacher Responses to Evaluation of Certain Items  
in Terms of Format of Units of Instruction

All the participants responded to each item; number of respondents equalled number of participants in Table XX.

Item No. 1--"General Objectives"--with average score of 4.39 was the most highly evaluated. Then Items 5 and 6 each with average score of 4.08 were ranked second best. These items were "Instructional Materials" and "Information Sheets." The third best item was Item No. 3--"Specific Objectives"--while the least evaluated was Item 4--"Suggested Activities"--with an average score of 3.08. This evaluation did not follow the pattern of instructional units designed and recommended by

TABLE XX

RESPONSES TO EVALUATION OF CERTAIN ITEMS IN TERMS OF  
FORMAT OF UNITS OF INSTRUCTION

Terms	Very High 5		High 4		Moderate 3		Low 2		Very Low 1		Total Re- sponse	Total N. in Group	Total Scores	Average Scores	Rank
	N	%	N	%	N	%	N	%	N	%					
1. General Objectives	7	53.85	5	38.46			1	7.69			13	13	57.00	4.39	1
2. Terminal Objectives	2	15.38	7	53.85	3	23.08	1	7.69			13	13	49.00	3.77	5
3. Specific Objectives	4	30.77	5	38.46	3	23.08	1	7.69			13	13	51.00	3.92	4
4. Suggested Activities	1	7.69	6	46.15	4	30.77	1	7.69	1	7.69	13	13	40.00	3.08	7
5. Instructional Materials	3	23.08	8	61.54	2	15.38					13	13	53.00	4.08	2
6. Information Sheet	4	30.77	6	46.15	3	23.08					13	13	53.00	4.08	2
7. Quiz	2	15.38	6	46.15	2	15.38	3	23.08			13	13	46.00	3.54	6

the State Department of Vocational and Technical Education. Again, it did not look logical to make "Information Sheet" before "Specific Objectives." However, Braker (36) clearly pointed out that the pattern of the State Department should merely be a rule-of-thumb or guide rather than a hard-and-fast rule to be adhered to strictly. According to him, any teacher should feel free to develop a pattern of writing units of instruction which would be comfortable to him and his students. The author regretted that "Suggested Activities" were least rated by the teachers. Consequently, the author would wonder how could the teacher know what necessary preparations needed to be made before the lesson both by the teacher and the students, and also how would the objectives of the unit be discussed with the students. It could be concluded, therefore, that these teachers do not either understand or appreciate the principle of preparation which is among the laws of learning forwarded by Thorndike. The whole laws were presented earlier by the author. Again, these laws are otherwise called Herbatian Steps of Organizing Instruction.

#### Teacher Responses as to Time Curriculum

##### Should Be Revised

All the participating teachers responded accordingly. Ten out of 13 respondents felt that curriculum should be revised whenever necessary rather than at a given period or within a certain time limit. This response corresponded with the response of Group A-I. The author as earlier stated shared this choice because setting a period for the revision might not work most of the time. There might not be any need or nothing to revise at the time due for revision. Therefore, as the author mentioned earlier, curriculum revision should not be committed

to any time limits but instead should be left open to meet emerging situations and/or needs. However, two teachers indicated a three-year period frequency for curriculum revision. Full details shown in Table XXI.

TABLE XXI

## TEACHER RESPONSES TO FREQUENCY CURRICULUM SHOULD BE REVISED

Periods	N	%	Total Respondents	Total in Group
3 Years	2	15.38	13	13
5 Years	1	7.69	13	13
8 Years				
10 Years				
Whenever Necessary	10	76.92	13	13

Teacher Responses as to the Percent of CoreUnits Needing Supplementation

In Table XXII, the majority of the respondents, i.e. five teachers out of 13 felt that only 11 to 25 percent of the core units needed any supplementation. There was a similar attitude in Group A-I. This reflected the sufficiency of the units. Regretably, this positive reflection seemed offset as the next percentage indicated by four teachers was that more than 80 percent of the core units needed supplementation.

From this attitude it could, therefore, be concluded that the core units were not adequate and needed so much supplementation. Consequently, the problem besetting vocational agricultural teachers was not properly solved. Refer to author's earlier comments.

TABLE XXII  
RESPONSES TO PERCENT OF CORE UNITS NEEDING SUPPLEMENTATION

Percentages	N	%	Total Respondents	Total in Group
Less Than 10				
11 to 25	5	38.46	13	13
26 to 40	2	15.38	13	13
41 to 60	2	15.38	13	13
61 to 80				
More Than 80	4	30.77	13	13

Teacher Responses as to the Extent More

Suggestions for Variation in Teaching

Methods Are Needed

In Table XXIII, one out of the 13 participating teachers in the group did not respond at all. The number of respondents would then be 12. One half of the respondents indicated that only some suggestions for varying teaching methods were needed. The other half of the respondents checked the other response category. One quarter (3) of the



teachers felt that more suggestions for varying teaching methods were needed. Both responses were similar to those in Group A-I. One teacher however felt that no suggestions for varying teaching methods were needed. While the author shared the first two responses as ideal, yet, he should like to point out that varying teaching methods would largely depend upon the teacher's experience, facilities available, emerging situations, and environment. Frykhund (37) states the following:

The objective, the teacher, the learner, the subject-matter to be taught, the time limitations, and the equipment and supplies available are major factors in determining the best methods of teaching in a given situation (p. 164).

The author would like to add that accommodation (space) is another determining factor. One of the reasons for varying teaching methods is that there is not as yet a best method of teaching according to Frykhund (37). Some of the commonly known as well as used teaching methods are lecture, discussion, written instructions, chalkboard, observation, demonstration, recitation, seminars (conferences), and visual aids.

TABLE XXIII

TEACHER RESPONSES AS TO THE EXTENT MORE SUGGESTIONS FOR VARIATION  
IN TEACHING METHODS ARE NEEDED

Response Categories	N	%	Respondents	Total in Group
Very Much	2	16.67	12	13
Much	3	25.00	12	13
Some	6	50.00	12	13
A Little	1	8.33	12	13
None	1	8.33	12	13

Teacher Responses to Rating of Some Sources  
for Supplementation

In Table XXIV, two of the participating teachers did not check Sources 1 and 2, while another teacher did not check Source 11. Otherwise, most of the teachers checked every source for supplementation.

All the respondents rated Source 9--"Individualize Through Community Visits"--with average score of 4.92 as the best. It was rated second best by Group A-I. An explanation for rating this source highly according to the author is that through community visits, the teacher can learn, observe, and see some new things which he can incorporate into his teaching or even bring to the class. At any rate, he can enrich his experience. Sources 4 and 10 each with average scores of 4.77 tied as second best sources for supplementation. These were Source 4--"Films and/or Video Tapes"--and Source 10--"Individualizing Through Student Experience." The latter was rated second best in Group A-I. The third best sources were Source 3--"Resource Persons"--and Source 8--"Teacher Experience." In Group A-I, it was the most highly rated. At any rate, with the exception of "Films and/or Video Tapes" both groups selected the same sources but rated them in the reversed order. The least rated source was Source 6--"Recordings." This response corresponded with the choice of Group A-I. The author feels that Sources 8, 9, and 10 are the most readily available, followed by Source 1--"Farm Magazines." But they are, by no means, the best.

TABLE XXIV

## RESPONSES TO RATING OF SOURCES FOR SUPPLEMENTATION

Sources	Very Good 5		Good 4		Average 3		Fair 2		Poor 1		Total Re- sponse	Total N. in Group	Total Scores	Average Score	Rank
	N	%	N	%	N	%	N	%	N	%					
1. Farm Magazines	5	41.67	4	33.33	3	25.00					12	13	50.00	4.17	9
2. Up-To-Date Textbooks	5	41.67	4	33.30	3	25.00					12	13	50.00	4.17	9
3. Resource Persons	9	69.23	4	30.77							13	13	61.00	4.69	3
4. Films and/or Video Tapes	8	61.54	5	38.46							13	13	60.00	4.62	6
5. Slides	10	76.92	3	23.08							13	13	62.00	4.77	2
6. Recordings	5	38.46	6	46.15	2	15.38					13	13	55.00	4.23	8
7. Photographs	4	30.77	6	46.15	3	23.08					13	13	53.00	4.08	11
Individualize Through:															
8. Teacher Personal Experience	10	76.92	2	15.38	1	7.69					13	13	61.00	4.69	3
9. Community Visits	12	92.31	1	7.69							13	13	64.00	4.92	1
10. Student Experience	10	76.92	3	23.08							13	13	62.00	4.77	2
11. Fact Sheets	6	50.00	6	50.00							12	13	54.00	4.50	7

Teacher Responses on Units in Vo-Ag BasicCore Curriculum I

In Table XXV, the majority of the teachers showed that they taught most of the units. The least taught units were Unit VI--"Fasteners"--as indicated by seven teachers and Unit III--"Metal Work"--as indicated by six teachers. Both units were in Section F--"Agricultural Mechanics." The reasons given for not teaching these units were "Content Too Deep," "Facilities and Equipment Unavailable," "Not Enough Time," "Not Needed in My Community," and "Others." Rating and reasons were a direct replica of Group A-I. Again, Sections--"Areas of Instruction"--were not well responded to by the teachers. The author commented earlier on this poor response. For further details, see Table XXV.

Teacher Responses on Units in Vo-Ag BasicCore Curriculum II

In Table XXVI, all units were indicated to be taught by the respondents but especially units in Section B and Section E respectively. The least taught units were in Section F. These were Unit I--"Blueprint Reading"--as indicated by ten respondents and Units V--"Wood Fasteners" and VII--"Introduction to Plumbing"--as indicated each by eight teachers. Reasons given for not teaching these units were somewhat the same with those cited in Vocational Agriculture I. Again, this response was identical with that in Group A-I. For additional details on Core Curriculum II, see Table XXVI.

TABLE XXV

## RESPONSES TO UNITS IN VO-AG BASIC CORE CURRICULUM I

Section and Unit Number	No Response	Unit Taught		Reasons Unit Not Taught						
		Yes	No	No Knowledge	Content Too Deep	Facilities Equipment Limited	Little Time	Little Need	Too Elementary	Other
<b>Section A - Orientation &amp; Careers:</b>	10	2								
I - Orientation to Vocational Agriculture			12							
II - Careers in Agriculture	2	10								
<b>Section B - Leadership:</b>	11	1								
I - Introduction to Future Farmers of America			12							
II - Duties & Responsibilities of FFA Members	12									
III - Parliamentary Procedure and Public Speaking		11								1
<b>Section C - Supervised Experience Programs:</b>	5	7								
I - Planning and Implementing the Supervised Occupational Experience Program	1	11								
<b>Section D - Animal Science</b>	9	2	1							1
I - The Livestock Industry		11	1							1
II - Breeds of Livestock		11	1							1
III - Livestock Selection		11	1							1
IV - Livestock Feeding		11	1							1
<b>Section E - Plant and Soil Science</b>	9	3								
I - Plant and Soil Science		11	1							1
<b>Section F - Agricultural Mechanics</b>	10	1	2							2
I - Orientation and General Safety		10	3							3
II - Arc Welding		10	3							3
III - Metal Work		7	6							3
IV - Introduction to Oxyacetylene Cutting		10	3							3
V - Oxyacetylene Cutting		9	4							3
VI - Fasteners	2	4	7							3
VII - Farm Safety		10	3							3

TABLE XVI

RESPONSES TO UNITS IN VO-AG BASIC CORE CURRICULUM II

Section and Unit Number	No Response	Unit Taught		Reasons Unit Not Taught						
		Yes	No	No Knowledge	Content Too Deep	Facilities Equipment Limited	Little Time	Little Need	Too Elementary	Other
Section A - Agricultural Chemicals:	9	3								
I - Agricultural Chemicals	1	10	1							1
Section B - Leadership:	7	5								
I - Future Farmers of America		12								
II - Becoming a Good Leader		12								
Section C - Supervised Farm Training:	10	2								
I - Analysis and Evaluation of Supervised Farm Training Program		12								
II - Farm Credit	4	8								
Section D - Plant & Soil Science:	5	6	1							1
I - Elementary Study of Soils	1	10	1							1
II - Soil Conservation Practices		11	1							1
III - Plant Growth & Reproduction		11	1							1
IV - Seed Selection	1	7	4			1	1			2
V - Land Preparation	1	9	2						1	1
VI - Chemical Weed Control		11	1							1
VII - Plant Insect Control		11	1							1
VIII - Plant Diseases		9	3				1			2
IX - Landscaping		6	6	2		1		1		2
Section E - Animal Science:	7	4	1							1
I - Animal Nutrients		11	1							1
II - Composition and Classification of Feeds	1	10	1							1
III - Animal Digestion		11	1							1
IV - Maintaining Animal Health	1	10	1							1
V - Diseases		11	1							1
VI - Parasites		11	1							1
Section F - Agricultural Mechanics:	8	2	3			1				2
I - Blueprint Reading		3	10	4		1			1	2
II - Position Welding	1	9	3			1		1	1	2
III - Gysacetylene Fusion Welding		8	5	1		2				2
IV - Gysacetylene Brazing		10	3			1				2
V - Wood Fasteners		5	8			2				3
VI - Figuring Bills of Materials		6	7			3	1	1	1	2
VII - Introduction to Plumbing		5	8	1		3	1	1		2

Teacher Responses on Units in Vo-Ag Basic

Core Curriculum III

In Table XXVII, all the respondents indicated that they attempted all the units in the curriculum. But units in Section A--"Plant and Soil Science"--and B--"Animal Science"--were more attempted than units in other sections of the curriculum. The least attempted units were in Section F--"Agricultural Mechanics." These were Unit V--"Electric Motors"--and Unit VIII--"Brush Painting." Reasons checked against Unit V were "No Knowledge of Subject," "Facilities and Equipment Unavailable," "Not Enough Time," and "Others." As for Unit VII, nearly similar reasons were checked as is shown in the following: "Facilities and Equipment Unavailable," "Not Enough Time," "Too Elementary," and "Others." Details are given in Table XXVII.

Teacher Responses on Units in Vo-Ag Basic

Core Curriculum IV

In Table XXVIII, all units were indicated to have been attempted by all the respondents. This reflected the general acceptance and usage of the curriculum. Units in Section A--"Supervised Training Program-Farm Business Management," and Section B--"Leadership and Careers"--were more taught than other units. Again, the least attempted units were in Section D--"Agricultural Mechanics." Specifically these were Unit II--"Rafter Framing," Unit VIII--"Servicing the Tractor--Fuel Systems," and Unit IX--"Ignition System." The reasons given for not teaching these units were somewhat similar and were "No Knowledge of Subject," "Facilities and Equipment Unavailable," "Not Enough Time," and "Others."

TABLE XXVII

## RESPONSES TO UNITS IN VO-AG BASIC CORE CURRICULUM III

Section and Unit Number	No Response	Unit Taught		Reasons Unit Not Taught						
		Yes	No	No Knowl- edge	Content Too Deep	Facilities Equipment Limited	Little Time	Little Seed	Too Elementary	Other
<b>Section A - Plant and Soil Science:</b>	10	2	1							1
I - Marketing Crops		8	5		1	1	2			1
II - Fertilizer		12	1							1
III - Improving Native Rangeland		12	1							1
IV - Establishing & Improving Tame Pastures		12	1							1
<b>Section B - Animal Science:</b>	9	2	2							2
I - Reproductive Organs of Farm Mammals		11	2							2
II - Collecting and Examining Semen		9	4							4
III - Artificial Insemination		10	3		1					2
IV - Fertility & Pregnancy Testing		9	4		1		1			2
V - Market Grades & Classes of Livestock		11	2							2
VI - Marketing Livestock & Market Agencies		11	2							2
VII - Livestock Price Trends & Cycles		9	4	1	1					2
VIII - Selecting & Breeding Livestock		11	2							2
<b>Section C - Supervised Training Program Farm Business Management:</b>	9	3	1							1
I - Analysis & Evaluation of Super- vised Farm Training Program		2	10	1						1
II - Acquisition of Farm Land		9	4				2			2
III - Budgeting		1	10	2			1			1
<b>Section D - Leadership:</b>	11	1	1							1
I - Importance of Public Speaking		10	3				1			2
II - Developing and Delivering a Speech		10	3				1			2
<b>Section E - Career Selection:</b>	10	2	1							1
I - Career Selection		12	1							1
II - Human Relations		11	2				1			1
<b>Section F - Agricultural Mechanics:</b>	9	1	3			1	1			1
I - Fundamentals of Electricity		9	4			1				3
II - Electrical Safety		9	4			1				3
III - Electrical Wiring Practices		7	6			2	1			3
IV - Planning the Wiring Layout		4	7			2	2			3
V - Electric Motors	2	4	9			3	3			2
VI - Using the Farm Level		10	3	1			1			2
VII - Brush Painting	1	4	8			1	2		3	2
VIII - Engine Operation		6	7			2	2			3
IX - Servicing Small Engines		7	6			2	1			3



TABLE XXVIII

## RESPONSES TO UNITS IN VO-AG BASIC CORE CURRICULUM IV

Section and Unit Number	No Response	Unit Taught		Reasons Unit Not Taught						
		Yes	No	No Knowledge	Content Too Deep	Facilities Equipment Limited	Little Time	Little Need	Too Elementary	Other
<b>Section A - Supervised Training Program</b>										
Farm Business Management:	9	3								
I - Farm Records - Farm Inventories		11	1		1					
II - Farm Records - Net Worth Inventories		11	1		1					
III - Financing the Farm Business:										
Sources of Credit	1	1	10				1			
IV - Insurance		9	3	2			1			
V - Tax Management		10	2	1			1			
VI - Machinery & Equipment Management	1	7	4				2			2
VII - Custom Services Versus Ownership		9	3				1	2		
VIII - Analysis & Evaluation of Supervised Farm Training Program		12								
<b>Section B - Leadership &amp; Careers:</b>	11	1								
I - Developing the FFA Program of Activities		12								
II - Young Farmer Association of Oklahoma		7	5				3	1		1
III - Selecting a Career		12								
<b>Section C - Plant &amp; Soil Science:</b>	11	1								
I - Land Judging		10	2				1			1
II - Soil Sampling		11	1							
III - Soil Survey Reports & Legal Land Description		10	2		1					1
IV - Soil Conservation Service & Conservation Districts		10	2				1			1
V - Agriculture Stabilization & Conservation Service		9	3				2			1
<b>Section D - Agricultural Mechanics:</b>	11	1	1				1			
I - Building Farm Fences		8	5				4			1
II - Rafter Framing		6	7			1	4			2
III - Farm Utility Buildings		7	6	1		1	3			1
IV - Servicing the Tractor Air Supply System	1	7	5				4			1
V - Servicing Wheel Bearings	1	7	5				3			2
VI - Battery Service	1	6	6	1			4			1
VII - Servicing the Tractor Lubrication System	1	7	5				4			1
VIII - Servicing the Tractor-Fuel System	1	5	7	1			5			1
IX - Ignition System	2	5	6				5			1
X - Servicing the Tractor Cooling System	1	5	7	1			5			1
XI - Spray Painting	1	10	2			1				1

In general, in both Group A-I and Group A-II, all units were taught by the majority of the teachers. But units on "Careers," "Leadership," and "Animal Science" were most taught, while units on "Agricultural Mechanics" were least attempted. Common reasons checked were "Lack of Knowledge of Subject," "Unavailable Facilities and Equipment," and "Insufficient Time."

#### Responses of Group B-I: Non-Cooperating

Teachers with More Than Eight

Years Teaching Experience

#### Teacher Responses as to Best Description of a Curriculum

As shown in Table XXIX the number of respondents was somewhat erratic. The reason was that some respondents did not check some Statements namely 1, 2, 5, 9, and 10. In any case, percentages were determined from the number of respondents only, rather than the number of the participating group. These unchecked statements might have been overlooked, misunderstood, or no opinion could be made.

However, the average scores of the statements ranged from 3.32 to 7.50. Statement 8 with the highest average score of 7.50 was ranked first as well as rated the best curriculum description. The statement reads: "A course of study in a school." This response was the same in both Group A-I and Group A-II. The author already commented on the response. The second best statement was Statement No. 1 with average score of 6.72: "All the learning experiences the student has while attending school." This rating corresponded with the rating of Group

TABLE XXIX

MEAN RESPONSES INDICATING RANKING OF DESCRIPTION OF CURRICULUM

State- ments*	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	Total Re- sponse	Total N. in Group	Average Scores	Rank
1	1	4.00	2	8.00	1	4.00	1	4.00	3	12.00	2	8.00	4	16.00	1	4.00	7	28.00	3	12.00	25	26	6.72	2
2	1	4.00			2	8.00	4	16.00	4	16.00	3	12.00	1	4.00	3	12.00	5	20.00	2	8.00	25	26	6.28	3
3	1	3.85	3	11.54			5	19.23	5	19.23	5	19.23	4	15.38	2	7.69	1	3.85			26	26	5.19	7
4	3	11.54	1	3.85			2	7.69	4	15.38	5	19.23	2	7.69	5	19.23	1	3.85	3	11.54	26	26	6.00	4
5	11	44.00	1	4.00	3	12.00	1	4.00	3	12.00	1	4.00	4	16.00	1	4.00					25	26	3.32	10
6	1	3.85	11	42.31	4	15.38	1	3.85	1	3.85	3	11.54	1	3.85	1	3.85	2	7.69	1	3.85	26	26	4.04	9
7	3	11.54	3	11.54	7	26.92	3	11.54	1	3.85			2	7.69	5	19.23	2	7.69			26	26	4.58	8
8	1	3.85	1	3.85			3	11.54	3	11.54	1	3.85	2	7.69	2	7.69	1	3.85	12	46.15	26	26	7.50	1
9	3	12.00	2	8.00	7	28.00	2	8.00			2	8.00	2	8.00	3	12.00	3	12.00	1	4.00	25	26	5.48	6
10	1	4.00	2	8.00	2	8.00	4	16.00	2	8.00	3	12.00	3	12.00	2	8.00	3	12.00	3	12.00	25	26	5.88	5

- \* 1. All the learning experiences the students have while attending school.
- 2. The subject matter and activities involved in a specific course or discipline.
- 3. The combination of courses pursued by a student, both required and elective courses.
- 4. All the planned learning outcomes for which the school is responsible.
- 5. A well planned "core" of subject matter concepts and information desirable for the learner, including instructional sequence.
- 6. A well developed series of instructional guides and/or workbooks containing outlines of subject matter to be learned.
- 7. The general overall plan of the content or specific materials for a course of instruction.
- 8. A course of study in a school.
- 9. All instruction which may lead to a productive life as a useful citizen.
- 10. A combination of activities to accomplish greater mental and physical development.

A-II, but disagreed with that of Group A-I which rated Statement 4--"All the planned learning outcomes for which the school is responsible." But strictly speaking, the author would tend to think both statements to be the same in content. Both capitalized on the experiences or outcomes to be acquired in school. They were simply worded differently. The author made some extended comments previously. Statement 5--"A well planned 'core' of subject matter concepts and information desirable for the learner, including instructional sequence"--with the lowest average score of 3.32 was the least desirable. Both Groups A-I and A-II rated the same statement similarly. Full data is shown in Table XXIX.

#### Teacher Responses to Contents of Curriculum

##### Development as Applied to Vocational

##### Agriculture

In Table XXX, all the participating teachers responded to each concept. Therefore, the number of participating teachers equalled the number of respondents.

The respondents indicated their respective degree of acceptance of some concepts of curriculum development. There were five response categories with given values: Strongly Agree--1; Agree--2; Undecided--3; Disagree--4; and Strongly Disagree--5. As these values were reversed, low average score would reflect positive response. The average scores ranged from 1.27 to 4.27.

Concept No. 5--"The curriculum and/or learning experiences must include a maximum amount of experiential learning, i.e. 'learning by doing'"--with the least average score of 1.27 was the most accepted. It was similarly rated best by Groups A-I and A-II, respectively. In

TABLE XXX  
 MEAN RESPONSES TO CONCEPTS OF CURRICULUM DEVELOPMENT AS  
 APPLIED TO VOCATIONAL AGRICULTURE

Concepts*	SA:1		A:2		U:3		D:4		SD:5		Total Re- sponse	Total N. in Group	Total Scores	Average Scores	Rank
	N	%	N	%	N	%	N	%	N	%					
1	1	3.85	3	11.54			6	23.08	16	61.54	26	26	111.00	4.27	11
2			1	3.85			17	65.39	8	30.77	26	26	110.00	4.23	10
3	16	61.54	7	26.92	1	3.85	2	7.69			26	26	41.00	1.58	2
4	15	57.69	9	34.62			2	7.69			26	26	41.00	1.58	2
5	17	65.39	8	30.77							26	26	33.00	1.27	1
6	6	23.08	19	73.08	1	3.85					26	26	47.00	1.81	4
7	3	11.54	5	19.23	2	7.69	7	26.92	9	34.62	26	26	92.00	3.54	9
8	2	7.69	11	42.31	4	15.38	6	23.08	3	11.54	26	26	75.00	2.88	7
9	6	23.08	17	65.39			3	11.54			26	26	52.00	2.00	6
10	2	7.69	5	19.23	2	7.69	12	46.15	5	19.23	26	26	91.00	3.50	8
11	13	50.00	8	30.77	2	7.69	3	11.54			26	26	47.00	1.81	4

- \* 1. As a teacher, I find I have little time to be concerned about what to teach.  
 2. A good text book and/or workbook is the best source for determining what to teach.  
 3. A good teacher uses all subject matter as a vehicle for preparing the learning for "making decisions."  
 4. The curriculum should reflect the needs and concerns of the society (community) in which the learner lives.  
 5. The curriculum and/or learning experience must include a maximum amount of experimental learning, i.e. "learning by doing."  
 6. Subject matter in the curriculum is best presented through a performance objective approach.  
 7. Final decision on curriculum should be made by the teacher without any influence, i.e. principals, school districts, school department chairmen, curriculum guides.  
 8. The teacher and the learner should have free choice in curriculum development.  
 9. Best sources of objectives for developing a curriculum are the learner, the society, and the subject matter.  
 10. Objectives for instruction should largely be developed soon after the first few days of classwork.  
 11. Objectives for instruction should be developed well in advance of the beginning of the school term.

Group A-I, three concepts, Numbers 3, 4, and 5 were tied to the same rank. The next accepted one was Concept No. 3--"A good teacher uses all subject matter as a vehicle for preparing the learning for 'making decisions'"--with average score of 1.58. In fact, Concept No. 4--"The curriculum should reflect the needs and concerns of the society (community) in which the learner lives"--tied with Concept No. 3. While Group A-I included both concepts in the best rank, Groups A-II and B-I ranked Concept 3 second best accepted concept. But Group A-I choose Concept 11 which is "Objectives for instruction should be developed well in advance of the beginning of the school term" as second best. The least accepted one was Concept No. 1--"As a teacher, I find I have little time to be concerned about what to teach." This concept was treated the same by Group A-II, but Group A-I rated Concept 2--"A good textbook and/or workbook is the best source for determining what to teach"--lowest, i.e. least accepted. The author expressed his opinion in the previous analysis.

Teacher Responses as to Approximate Percent of  
Time Curriculum Is Followed in Present  
Teaching

In general, most of the respondents indicated that they were spending 51 to 75 percent of their time using the Basic Core Curriculum in their teaching. So, it could be concluded that each of the curriculum was meeting the target of 60 percent for which it was designed to account. This result was the same in previous analyses. However, there was a variation in Agricultural Mechanics. It was only in Group A-I that half of the respondents indicated they were spending 51 to 75 percent of

their time following that particular curriculum. In Groups A-II and B-I respondents indicated that they were spending 26 to 50 percent. This response correctly corresponded with similar naive responses on teaching units of Agricultural Mechanics. In general, these units were often times indicated the least taught.

TABLE XXXI  
RESPONSES AS TO APPROXIMATE PERCENT OF TIME CURRICULUM  
IS FOLLOWED IN PRESENT TEACHING

Core Curric.	Less Than 10%		10- 25%		26- 50%		51- 75%		More Than 75%		Total Re- sponse	N. in Group
	N	%	N	%	N	%	N	%	N	%		
Vo Ag I			2	7.69	14	53.85	10	38.46	26		26	
Vo Ag II			4	15.38	16	61.54	6	23.08	26		26	
Vo Ag III			1	4.17	5	20.83	14	58.33	4	16.67	24	26
Vo Ag IV			1	4.17	8	34.78	11	47.83	3	13.04	23	26
Ag Mech					6	75.00	2	25.00			8	26

Note: 2 teachers did not check Vo Ag III.  
3 teachers did not check Vo Ag IV.  
18 persons did not check Ag Mech.  
Percentages were based on total response.

#### Teacher Responses to Relevancy of the Core

##### Materials by Years

Almost all the respondents checked that the Core Curriculum Materials were very relevant at Year 4. In fact, there was 100 percent score

(perfect score) in Core Materials of Agricultural Mechanics as all the seven respondents indicated that the materials were relevant. However, it should be noted that four respondents checked Core Materials in Vocational Agriculture II as too advanced in Year 1. Same number reacted similarly to the Core Materials in Vocational Agriculture IV in Year 1 too. Again, one teacher indicated that at Year 1, Core Materials in Vocational Agriculture I were too advanced. The author observed that this was the first time this reaction to Core Materials in Vocational Agriculture III and IV respectively were checked as too advanced. In any case, this response should not be so significant as to cause any concern. It should however, be noted.

TABLE XXXII  
RESPONSES TO RELEVANCY OF CORE MATERIALS BY YEARS

Core Curric.	Year 1		Year 2		Year 3		Year 4		Total Re- sponse	Total N. in Group
	M* Too Ad- vanced N	%	M Too Easy N	%	M Not Rele- vant N	%	M Very Rele- vant N	%		
Vo Ag I	1	4.35			22	95.65	23		23	26
Vo Ag II	4	17.39			19	82.61	23		23	26
Vo Ag III	2	9.09			20	90.91	22		22	26
Vo Ag IV	4	17.39			19	82.61	23		23	26
Ag Mech					7	100.00	7		7	26

Note: \*Materials  
3 teachers did not respond at all.  
1 teacher did not check Vo Ag III.  
3 teachers did not check Vo Ag IV.  
19 teachers did not check Ag Mech.



### Teacher Responses to Evaluation of Certain Items

#### In Terms of Format of Units of Instruction

In Table XXXIII, two of the participation teachers in the group did not respond at all. Thus, number of respondents would be less by two than the total number of the group.

Item 3--"Specific Objectives"--with average score of 4.29 was the best evaluated. The next best item was Item 6--"Information Sheet"--with average score of 4.25. Item 1--"General Objectives"--and Item 2--"Terminal Objectives"--were concurrently ranked third. The least rated were Items 4 and 7. This evaluation nearly followed the sequence of writing a unit of instruction as recommended by Braker (36). The recommended sequence was discussed by the author in the early part of this analysis.

### Teacher Responses to the Time Curriculum

#### Should Be Revised

In Table XXXIV, one of the participants did not respond at all. Therefore, total respondents would be less by one. Nevertheless, the majority of the respondents indicated that revision of curriculum should be whenever necessary. The author observed that, so far, such was the favored responses throughout the analysis. About one sixth of the respondents, however, checked the Three Year Period. There was no response at all to the Five Year, Eight Year, and Ten Year Periods. The author previously expressed his opinion over the response.

TABLE XXXIII

RESPONSES TO EVALUATION OF CERTAIN ITEMS IN TERMS OF  
FORMAT OF UNITS OF INSTRUCTION

Terms	Very High 5		High 4		Moderate 3		Low 2		Very Low 1		Total Re- sponse	Total N. in Group	Total Scores	Average Scores	Rank
	N	%	N	%	N	%	N	%	N	%					
1. General Objectives	8	33.33	13	54.17	3	12.50					24	26	101.00	4.21	3
2. Terminal Objectives	7	29.17	15	62.50	2	8.33					24	26	101.00	4.21	3
3. Specific Objectives	9	37.50	13	54.17	2	8.33					24	26	103.00	4.29	1
4. Suggested Activities	4	16.67	14	58.33	6	25.00					24	26	94.00	3.92	6
5. Instructional Materials	4	16.67	19	79.17	1	4.17					24	26	99.00	4.13	5
6. Information Sheet	8	33.33	14	58.33	2	8.33					24	26	102.00	4.25	2
7. Quiz	2	8.33	18	75.00	4	16.67					24	26	94.00	3.92	6

TABLE XXXIV  
 RESPONSES TO THE FREQUENCY CURRICULUM SHOULD BE REVISED

Periods	N	%	Total Respondents	Total in Group
3 Years	4	16.00	25	26
5 Years				
8 Years				
10 Years				
Whenever Necessary	21	84.00	25	26

Teacher Responses as to the Percent of Core

Units Needing Supplementation

In Table XXXV, one of the participating teachers did not respond. Responses were widely distributed such that it was not easy to pin down an outstanding response. However, the highest number of respondents showed that 11 to 25 percent of the core units need supplementation. The next high number indicated less than 10 percent supplementation would be needed. The author observed that, so far in the analysis, 11 to 25 percent was the indicated percentage of the core units which would need any supplementation. Otherwise, as already commented, the core units were largely self-sufficient. In fact, supplementation would merely be by way of motivation, localizing, personalizing, and little updating whenever new facts are available. If the core units would require 41 to 60 percent or more, they would not account for 60 percent of an instructor's time. The teacher would have to spend more time

gathering as well as organizing what to teach to his students. One teacher reflected this idea by indicating that more than 80 percent of the core units were needing supplementation.

TABLE XXXV  
RESPONSES AS TO THE PERCENT OF CORE UNITS  
NEEDING SUPPLEMENTATION

Percentages	N	%	Total Respondents	Total in Group
Less Than 10	6	24.00	25	26
11 to 25	7	28.00	25	26
26 to 40	5	20.00	25	26
41 to 60	3	12.00	25	26
61 to 80	3	12.00	25	26
More Than 80	1	4.00	25	26

Teacher Responses as to the Extent More

Suggestions for Variation in Teaching

Methods Are Needed

Of the participating 26 teachers, one teacher did not respond. The responses were widely distributed. However, the majority of the respondents checked that some suggestions were needed for varying teaching methods. One sixth of the teachers indicated only a little suggestion was needed. The author felt that some suggestions to vary the teaching methods would be ideal. As a matter of fact, this response was the most

preferred so far throughout the analysis.

TABLE XXXVI  
RESPONSES AS TO THE EXTENT MORE SUGGESTIONS FOR  
VARIATION IN TEACHING METHODS ARE NEEDED

Response Categories	N	%	Total Respondents	Total in Group
Very Much	3	12.00	25	26
Much	3	12.00	25	26
Some	14	56.00	25	26
A Little	4	16.00	25	26
None	1	4.00	25	26

Teacher Responses to Rating of Sources  
for Supplementation

In Table XXXVII, one teacher did not respond. Thus, the number of respondents would be less by one. All the respondents checked Sources 9 and 10 as the best having the highest average scores of 4.68. These were Source 9--"Individualize Through Community Visits"--and Source 10--"Individualize Through Student Experience." Group A-I ranked Source 9 as the best and Source 10 as second best. But the rating of Group A-II corresponded with the rating of Group B-I under discussion. The next rated one was Source 3--"Resource Persons." Again, this response was identical to that of Group A-II but different in Group A-I which ranked

TABLE XXXVII

## RESPONSES TO RATING OF SOURCES FOR SUPPLEMENTATION

Sources	Very Good 5		Good 4		Average 3		Fair 2		Poor 1		Total Re- sponse	Total N. in Group	Total Scores	Average Scores	Rank
	N	%	N	%	N	%	N	%	N	%					
1. Farm Magazines	7	28.00	12	48.00	4	16.00	2	8.00			25	26	99.00	3.96	9
2. Up-To-Date Textbooks	6	24.00	13	52.00	4	16.00	1	4.00	1	4.00	25	26	97.00	3.88	10
3. Resource Persons	17	68.00	5	20.00	3	12.00					25	26	114.00	4.56	3
4. Films and/or Video Tapes	11	44.00	9	36.00	5	20.00					25	26	106.00	4.24	5
5. Slides	8	32.00	14	56.00	3	12.00					25	26	105.00	4.20	6
6. Recordings	3	12.00	13	52.00	5	20.00	4	16.00			25	26	90.00	3.60	11
7. Photographs	7	28.00	14	56.00	2	8.00	2	8.00			25	26	101.00	4.04	8
Individualize Through:															
8. Teacher Personal Experience	11	44.00	13	52.00	1	4.00					25	26	110.00	4.40	4
9. Community Visits	17	68.00	8	32.00							25	26	117.00	4.68	1
10. Student Experience	19	76.00	4	16.00	2	8.00					25	26	117.00	4.68	1
11. Fact Sheets	10	40.00	9	36.00	4	16.00	2	8.00			25	26	102.00	4.08	7

this source for supplementation as the best of all. Source 6--"Recordings"--was the least rated as was also its case in both Groups A-I and A-II. The author previously commented on these ratings.

#### Teacher Responses on Units in Vo-Ag Basic

##### Core Curriculum I

In Table XXXVIII, all the respondents indicated that they taught all units, particularly units on "Orientation and Careers," "Leadership," and "Animal Science." The least taught units were Unit VI--"Fasteners"--and Unit III--"Metal Work." Both units were in Agricultural Mechanics. The reasons checked were "No Knowledge of Subject," "Facilities and Equipment Unavailable," "Not Enough Time," and "Others."

#### Teacher Responses on Units in Vo-Ag Basic

##### Core Curriculum II

In Table XXXIX, all units were indicated to have been taught by all the teachers. Again, units that were indicated to be taught less were in Agricultural Mechanics. They were Unit V--"Wood Fasteners"--and Unit I--"Blueprint Reading." Same reasons given in Vocational Agriculture I were checked for not teaching these units.

#### Teacher Responses on Units in Vo-Ag Basic

##### Core Curriculum III

In Table XL, all the teachers responded to have taught all the units. There was less response in the Agricultural Mechanics Units, especially Unit V--"Electric Motors"--and Unit IV--"Planning the Wiring Layout." Reasons given for not teaching the units were identical to

TABLE XXXVIII

RESPONSES TO UNITS IN VO-AG BASIC CORE CURRICULUM I

Section and Unit Number	No Response	Unit Taught		Reasons Unit Not Taught						
		Yes	No	No Knowl- edge	Content Too Deep	Facilities Equipment Limited	Little Time	Little Need	Too Elemen- tary	Other
Section A - Orientation & Careers:	17	9								
I - Orientation to Vocational Agriculture	1	25								
II - Careers in Agriculture	2	24								
Section B - Leadership:	23	3								
I - Introduction to Future Farmers of America		26								
II - Duties & Responsibilities of FFA Members		26								
III - Parliamentary Procedure and Public Speaking		26								
Section C - Supervised Experience Programs:	7	19								
I - Planning and Implementing the Supervised Occupational Experience Program	4	20	2		1			1		
Section D - Animal Science	11	15								
I - The Livestock Industry		26								
II - Breeds of Livestock		26								
III - Livestock Selection		26								
IV - Livestock Feeding	1	25								
Section E - Plant and Soil Science	16	10								
I - Plant and Soil Science		26								
Section F - Agricultural Mechanics	17	7	2		1				1	
I - Orientation and General Safety		23	3		1				2	
II - Arc Welding		23	3		1				2	
III - Metal Work		15	11		5		3		3	
IV - Introduction to Oxyacetylene Cutting	1	21	4		1				3	
V - Oxyacetylene Cutting		19	7	1	1		1		4	
VI - Fasteners	2	9	15	1	3		7		4	
VII - Farm Safety		22	4		1		1		7	



TABLE XXXIX

RESPONSES TO UNITS IN VO-AG BASIC CORE CURRICULUM II

Section and Unit Number	No Response	Unit Taught		Reasons Unit Not Taught						
		Yes	No	No Knowl- edge	Content Too Deep	Facilities Equipment Limited	Little Time	Little Need	Too Elemen- tary	Other
Section A - Agricultural Chemicals:	2	23	1						1	
I - Agricultural Chemicals		25	1						1	
Section B - Leadership:	3	23								
I - Future Farmers of America		26								
II - Becoming a Good Leader	1	25								
Section C - Supervised Farm Training:	4	22								
I - Analysis and Evaluation of Supervised Farm Training Program		26								
II - Farm Credit	3	22	1				1			
Section D - Plant & Soil Science:	4	22								
I - Elementary Study of Soils		26								
II - Soil Conservation Practices		26								
III - Plant Growth & Reproduction		26								
IV - Seed Selection	1	20	5		2		2			1
V - Land Preparation		22	4		2		2			
VI - Chemical Weed Control	1	23	2		2					
VII - Plant Insect Control		24	2		1		1			
VIII - Plant Diseases		22	4		2		2			
IX - Landscaping	1	13	12	4			4	2		2
Section E - Animal Science:	4	22								
I - Animal Nutrients		26								
II - Composition and Classification of Feeds		26								
III - Animal Digestion	7	18	1		1					
IV - Maintaining Animal Health		26								
V - Diseases		26								
VI - Parasites		26								
Section F - Agricultural Mechanics:	6	18	2	2						
I - Blueprint Reading	2	11	13	4	3	1	4			1
II - Position Welding	7	17	2							2
III - Oxyacetylene Fusion Welding		20	6			2	2			2
IV - Oxyacetylene Brazing	1	17	8			2	3			3
V - Wood Fasteners	1	11	14	1		2	9			2
VI - Figuring Bills of Materials	1	23	2	1						1
VII - Introduction to Plumbing	1	18	7	1		1	3	1		1

TABLE XL

## RESPONSES TO UNITS IN VO-AG BASIC CORE CURRICULUM III

Section and Unit Number	No Response	Unit Taught		Reasons Unit Not Taught						
		Yes	No	No Knowl- edge	Content Too Deep	Facilities Equipment Limited	Little Time	Little Need	Too Elemen- tary	Other
Section A - Plant and Soil Science:	18	6	2							
I - Marketing Crops	1	19	6			1	2	1		2
II - Fertilizer		24	2							2
III - Improving Native Rangeland	1	21	4				1	1		2
IV - Establishing & Improving Tame Pastures	1	22	3				1			2
Section B - Animal Science:	19	5	2							2
I - Reproductive Organs of Farm Mammals		23	3				1			2
II - Collecting and Examining Semen		18	8			3	3			2
III - Artificial Insemination		20	6			2	2			2
IV - Fertility & Pregnancy Testing	2	17	7	1		2	2			2
V - Market Grades & Classes of Livestock		24	2							2
VI - Marketing Livestock & Market Agencies		23	3				1	1		1
VII - Livestock Price Trends & Cycles		21	5		1	1	1			2
VIII - Selecting & Breeding Livestock	1	23	2							2
Section C - Supervised Training Program										
Farm Business Management:	13	11	2							2
I - Analysis & Evaluation of Super- vised Farm Training Program	3	21	2							2
II - Acquisition of Farm Land		22	4							4
III - Budgeting	2	18	6			1	2			3
Section D - Leadership:	17	7	2							2
I - Importance of Public Speaking	1	23	2							2
II - Developing and Delivering a Speech	1	23	2							2
Section E - Career Selection:	16	8	2			1				1
I - Career Selection	1	22	3	1		1				1
II - Human Relations	3	19	4			1	2			1
Section F - Agricultural Mechanics:	19	5	2							2
I - Fundamentals of Electricity	2	15	9	2	2	2	3			
II - Electrical Safety	2	17	7	1	1	2	2			1
III - Electrical Wiring Practices	2	14	10	2		4	3			1
IV - Planning the Wiring Layout	2	11	13	2		4	5			2
V - Electric Motors	4	8	14	7		3	4			
VI - Using the Farm Level	1	16	9			5	2			2
VII - Brush Painting	2	12	12	1		2	6			3
VIII - Engine Operation	3	11	12			4	4			4
IX - Servicing Small Engines	1	13	14	1		3	5			3

those quoted in Vocational Agriculture I and Vocational Agriculture II, respectively.

Teacher Responses on Units in Vo-Ag Basic

Core Curriculum IV

In Table XLI, all units of the curriculum were indicated to have been taught by the respondents. But Agricultural Mechanics Units received less positive response. The least taught units were Unit IX--"Ignition System"--and Unit VIII--"Servicing the Tractor-Fuel System." Reasons given were "No Knowledge of Subject," "Not Enough Time," "Too Elementary," and "Others."

Responses of Group B-II: Non-Cooperating

Teachers with Less Than Eight

Years Teaching Experience

Teacher Responses to Best Description of a

Curriculum

In Table XLII, all the participating teachers did not respond accordingly as shown in the following: one teacher did not respond at all; one teacher did not check Statement 1; one teacher did not check Statement 4; and two teachers did not check Statement 9.

The author assumed that this lack of response might be attributed to oversight or indecision. However, the overall response ranked Statement 1--"All the learning experiences the students have while attending school"--as the best description of a curriculum. This was the first time a better and somewhat professional rating was given. This ranking

TABLE XLI

## RESPONSES TO UNITS IN VO-AG BASIC CORE CURRICULUM IV

Section and Unit Number	No Response	Unit Taught		Reasons Unit Not Taught						
		Yes	No	No Knowl- edge	Content Too Deep	Facilities Equipment Limited	Little Time	Little Need	Too Elemen- tary	Other
<b>Section A - Supervised Training Program</b>										
Farm Business Management:	16	8	2							2
I - Farm Records - Farm Inventories		24	2							2
II - Farm Records - Net Worth Inventories		24	2							2
III - Financing the Farm Business: Sources of Credit		24	2							2
IV - Insurance		20	6	2	1		1			2
V - Tax Management	2	16	8	2	2	1				3
VI - Machinery & Equipment Management	4	14	8	2			2			4
VII - Custom Services Versus Ownership	3	15	8				4			4
VIII - Analysis & Evaluation of Supervised Farm Training Program	1	22	3				1			2
<b>Section B - Leadership &amp; Careers:</b>										
I - Developing the FFA Program of Activities	17	7	2							2
II - Young Farmer Association of Oklahoma		24	2							2
III - Selecting a Career	3	17	6				3			3
		24	2							2
<b>Section C - Plant &amp; Soil Science:</b>										
I - Land Judging	19	2	5	1			1			5
II - Soil Sampling	1	20	5			1				3
III - Soil Survey Reports & Legal Land Description	1	20	5							4
IV - Soil Conservation Service & Conservation Districts	1	23	2							2
V - Agriculture Stabilization & Conservation Service	1	21	4				1			3
	1	21	4				1			3
<b>Section D - Agricultural Mechanics:</b>										
I - Building Farm Fences	18	4	4				1			4
II - Rafter Framing		21	5				1			4
III - Farm Utility Buildings	4	12	10	3		2				4
IV - Servicing the Tractor Air Supply System	4	13	9	1		2	1			5
V - Servicing Wheel Bearings	2	15	9			1	4			4
VI - Battery Service	2	14	10			1	5			4
VII - Servicing the Tractor Lubrication System	2	13	11				6	1		4
VIII - Servicing the Tractor-Fuel System	2	16	8				4			4
IX - Ignition System	2	12	12	2			4		2	4
X - Servicing the Tractor Cooling System	2	11	13	4			5			4
XI - Spray Painting	3	13	10				6			4
	2	14	10	1		2	3			4

would be more welcomed by the Oklahoma State Department of Vocational and Technical Education than the ranking of the previous groups, all of which ranked Statement 8--"A course of study"--as the best description of a curriculum. However, Groups A-II and B-I rated Statement 1 their second best description. Statement 8 was the second best rated description by the group under discussion. The lowest ranked statement was Statement 5--"A well planned 'core' of subject matter concepts and information desirable for the learner, including instructional sequence." There was a unanimity in this ranking by all groups.

#### Teacher Responses to Concepts of Curriculum

##### Development as Applied to Vocational

##### Agriculture

In Table XLVIII, the most accepted concept was Concept 1--"As a teacher, I find I have little time to be concerned about what to teach." The author did not appreciate this rating as the concept was not actually a concept for curriculum development but rather a concept substantiating the usefulness and need for curriculum. As a matter of fact, Groups A-II and B-I rated it as the least accepted concept.

The second accepted concept was Concept 2--"A good textbook and/or workbook is the best source for determining what to teach." There was no similarity with other groups. In fact, Group A-I ranked it the lowest. The author felt that a textbook or workbook should never be a source for determining what to teach. The objectives drawn up usually the "Terminal and Specific Objectives" are some sources for determining what to teach. These objectives should be derived from the areas for curricular decisions given by Tyler whom Popham (22) quoted. Therefore,

TABLE XLII

## MEAN RESPONSES INDICATING RANKING OF DESCRIPTIONS OF CURRICULUM

State- ments*	1		2		3		4		5		6		7		8		9		10		Total Re- sponse	Total N. in Group	Average Scores	Rank
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%				
1	1	3.13	1	3.13			3	9.38	1	3.13	2	6.25	4	12.50	4	12.50	4	12.50	12	37.50	32	34	7.75	1
2	1	3.03			2	6.06	7	21.21	4	12.12	7	21.21	5	15.15	3	9.09	4	12.12			33	34	5.82	5
3	1	3.03	3	9.09	5	15.15	2	6.06	5	15.15	7	21.21	3	9.09	3	9.09	4	12.12			33	34	5.39	7
4	2	6.25			1	3.13	1	3.13	3	9.38	2	6.25	5	15.63	9	28.13	6	18.75	3	9.38	32	34	7.09	3
5	15	45.45	7	21.21	5	15.15	2	6.06	1	3.03	1	3.03			1	3.03	1	3.03			33	34	2.42	10
6	6	18.18	11	33.33	3	9.09	4	12.12	3	9.09	3	9.09	1	3.03			1	3.03	1	3.03	33	34	3.24	9
7	1	3.03	6	18.18	9	27.27	7	21.21	2	6.06	3	9.09	3	9.09	2	6.06					33	34	4.03	8
8	2	6.06	1	3.03			2	6.06	5	15.15	1	3.03	3	9.09	4	12.12	4	12.12	11	33.33	33	34	7.33	2
9	2	6.45			5	16.13	1	3.23	4	12.90	6	19.35	5	16.13	2	6.45	4	12.90	2	6.45	31	34	5.94	4
10	2	6.06	4	12.12	3	9.09	5	15.15	5	15.15	1	3.03	3	9.09	3	9.09	4	12.12	3	9.09	33	34	5.48	6

- \* 1. All the learning experiences the students have while attending school.  
 2. The subject matter and activities involved in a specific course or discipline.  
 3. The combination of courses pursued by a student, both required and elective courses.  
 4. All the planned learning outcomes for which the school is responsible.  
 5. A well planned "core" of subject matter concepts and information desirable for the learner, including instructional sequence.  
 6. A well developed series of instructional guides and/or workbooks containing outlines of subject matter to be learned.  
 7. The general overall plan of the content or specific materials for a course of instruction.  
 8. A course of study in a school.  
 9. All instruction which may lead to a productive life as a useful citizen.  
 10. A combination of activities to accomplish greater mental and physical development.

TABLE XLIII

MEAN RESPONSES TO CONCEPTS OF CURRICULUM DEVELOPMENT AS  
APPLIED TO VOCATIONAL AGRICULTURE

Concepts*	SA:1		A:2		U:3		D:4		SD:5		Total Re- sponse	Total N. in Group	Total Scores	Average Scores	Rank
	N	%	N	%	N	%	N	%	N	%					
1			3	8.82			12	35.29	19	55.88	34	34	149	4.38	1
2	2	5.88	4	11.76	7	20.59	17	50.00	4	11.76	34	34	119	3.50	2
3	8	23.53	21	61.76	4	11.76	1	2.94			34	34	66	1.94	9
4	16	47.09	16	47.00			2	5.88			34	34	56	1.65	10
5	17	50.00	16	47.00			1	2.94			34	34	33	1.56	11
6	6	17.64	21	61.76	6	17.64	1	2.94			34	34	70	2.06	7
7	1	2.94	10	29.41	4	11.76	16	47.09	3	8.82	34	34	112	3.29	3
8	2	5.88	13	38.24	9	26.47	10	29.41			34	34	95	2.79	5
9	5	14.71	22	64.71	2	5.88	5	14.71			34	34	75	2.21	6
10	2	5.88	9	26.47	3	8.82	17	50.00	3	8.82	34	34	112	3.29	3
11	6	17.64	23	67.65	2	5.88	3	8.82			34	34	70	2.06	7

- \* 1. As a teacher, I find I have little time to be concerned about what to teach.  
 2. A good text book and/or workbook is the best source for determining what to teach.  
 3. A good teacher uses all subject matter as a vehicle for preparing the learning for "making decisions."  
 4. The curriculum should reflect the needs and concerns of the society (community) in which the learner lives.  
 5. The curriculum and/or learning experience must include a maximum amount of experimental learning, i.e. "learning by doing."  
 6. Subject matter in the curriculum is best presented through a performance objective approach.  
 7. Final decision on curriculum should be made by the teacher without any influence, i.e. principals, school districts, school department chairmen, curriculum guides.  
 8. The teacher and the learner should have free choice in curriculum development.  
 9. Best sources of objectives for developing a curriculum are the learner, the society, and the subject matter.  
 10. Objectives for instruction should largely be developed soon after the first few days of classwork.  
 11. Objectives for instruction should be developed well in advance of the beginning of the school term.

a textbook or workbook should merely facilitate or supplement teaching. Concept 5--"The curriculum and/or learning experiences must include a maximum amount of experiential learning, i.e. 'learning by doing.'" This was another diverse response from the other groups, which rated the same concept as the most accepted concept. Teachers in this group had failed to appreciate the value of practical application in learning. They might not be aware of learning which the author discussed previously.

The author observed that so far in the analysis, the responses of teachers in this group were very diversified from those in other groups. Responses between other groups were either identical or closely the same.

#### Teacher Responses to Approximate Percent of Time

##### Curriculum Is Followed in Present Teaching

In most cases in Table XLIV, half of the respondents indicated that 51 to 75 percent of their time was spent in following each curriculum. The next indicated percent was 26 to 50 percent. This response corresponded with the other groups. Therefore, it could be conclusively confirmed that each curriculum accounted for 60 percent of the teacher's time as it was designed to meet.

In the following table, two teachers failed to check or respond to any of the questions; two did not check Vocational Agriculture III and IV. Fourteen teachers did not check Agricultural Mechanics. All percent calculations were based on total response.



TABLE XLIV  
 RESPONSES AS TO APPROXIMATE PERCENT OF TIME CURRICULUM  
 IS FOLLOWED IN PRESENT TEACHING

Core Curric.	Less Than 10%		10- 25%		26- 50%		51- 75%		More Than 75%		Total Re- sponse	Total N. in Group
	N	%	N	%	N	%	N	%	N	%		
Vo Ag I					2	6.25	15	46.88	15	26.88	32	34
Vo Ag II					5	15.63	16	50.00	11	34.38	32	34
Vo Ag III			1	3.33	9	30.00	17	56.67	3	10.00	30	34
Vo Ag IV			4	13.33	8	26.67	15	50.00	3	10.00	30	34
Ag Mech	1	5.56	1	5.56	7	38.89	7	38.89	2	11.11	18	34

#### Teacher Responses to Relevancy of Core

##### Materials by Years

There were various responses as indicated in Table XLV. However, the majority of respondents showed that the materials of each curriculum were very relevant at Year 4. But a quarter of the respondents indicated that the Core Materials of Vocational Agriculture III were too advanced at Year 1, while one third of the teachers indicated similar response for Vocational Agriculture IV. An insignificant number of teachers checked that materials were not relevant at Year 3.

In Table XLV, one teacher did not respond at all; two teachers did not check Vocational Agriculture III; four teachers did not check Vocational Agriculture IV. Eighteen teachers did not check Agricultural Mechanics. The percent calculations were based on total response.

TABLE XLV  
 RESPONSES TO RELEVANCY OF CORE MATERIALS BY YEARS

Core Curric.	Year 1		Year 2		Year 3		Year 4		Total Re- sponse	Total N. in Group
	M* Too Ad- vanced N	%	M Too Easy N	%	M Not Rele- vant N	%	M Very Rele- vant N	%		
Vo Ag I			4	12.12	1	3.03	28	84.85	33	34
Vo Ag II			3	9.09	1	3.03	29	87.88	33	34
Vo Ag III	6	19.35					25	80.65	31	34
Vo Ag IV	6	20.69			2	6.90	21	72.41	29	34
Ag Mech	1	6.25			1	6.25	14	87.50	16	34

Note: \*Materials

Teacher Responses to Evaluation of Certain Items  
in Terms of Format of Units of Instruction

In Table XLVI, Item 3--"Specific Objectives"--was the most highly evaluated. The other groups also rated this item as the best. The second best item was Item 2--"Terminal Objectives"--while the third best was Item 5--"Instructional Materials." Item 4--"Suggested Activities"--and Item 7--"Quiz"--were the least evaluated. Groups A-I and A-II rated Item 4 least, while Group B-I rated both Items 4 and 7 least, i.e. same evaluation as by Group-II. In any case, the rating was not close to the sequence which Dr. Braker (36) recommended. However, there was not fixed sequence to follow.

TABLE XLVI

RESPONSES TO EVALUATION OF CERTAIN ITEMS IN TERMS OF  
FORMAT OF UNITS OF INSTRUCTION

Terms	Very High 5		High 4		Moderate 3		Low 2		Very Low 1		Total Re- sponse	Total N. in Group	Total Scores	Average Scores	Rank
	N	%	N	%	N	%	N	%	N	%					
1. General Objectives	6	17.65	18	52.94	10	29.41					34	34	132	3.88	5
2. Terminal Objectives	11	32.35	15	44.12	8	23.53					24	24	139	4.09	2
3. Specific Objectives	16	47.06	12	35.29	5	14.71	1	2.94			34	34	145	4.26	1
4. Suggested Activities	6	17.65	16	47.06	10	29.41	2	5.88			34	34	128	3.76	6
5. Instructional Materials	8	23.53	20	58.82	6	17.65					34	34	138	4.06	3
6. Information Sheet	8	23.53	16	47.06	9	26.47	1	2.94			34	34	133	3.91	4
7. Quiz	6	17.65	17	50.00	8	23.53	3	8.82			34	34	128	3.76	6

Teacher Responses as to Time Curriculum

Should Be Revised

TABLE XLVII  
RESPONSES TO THE FREQUENCY CURRICULUM SHOULD BE REVISED

Periods	N	%	Total Respondents	Total in Group
3 Years	5	14.71	34	34
5 Years	5	14.71	34	34
8 Years			34	34
10 Years			34	34
Whenever Necessary	24	70.59	34	34

There was a full response. Of the 34 respondents, 24 felt that curriculum should be revised whenever necessary. This was a unanimous reaction by all the groups in the study. But one seventh of the respondents checked Third Year and Five Year Periods, respectively.

Teacher Responses as to the Percent of Core

Units Needing Supplementation

The majority of respondents in Table XLVIII indicated only 11 to 25 percent of the core units were needing supplementation. Such a response was general in all groups. As the author mentioned previously, this response would reflect to the adequacy of the core units. However,

about one sixth of the respondents checked these percentages: 26 to 40 percent; 41 to 60 percent; 61 to 80 percent.

TABLE XLVIII  
TEACHER RESPONSES AS TO PERCENT OF CORE UNITS  
NEEDING SUPPLEMENTATION

Percentages	N	%	Total Respondents	Total in Group
Less Than 10	1	2.94	34	34
11 to 25	11	32.35	34	34
26 to 40	6	17.65	34	34
41 to 60	6	17.65	34	34
61 to 80	6	17.65	34	34
More Than 80	4	11.76	34	34

Teacher Responses as to the Extent More

Suggestions for Variations in Teaching

Methods Are Needed

In Table XLIX, responses were widely distributed. However, more than half of the teachers showed that only some suggestions for varying teaching methods would be needed. About one third of the respondents indicated much suggestions would be needed. In general, some suggestions were more indicated and preferred by all groups in the study. The author already expressed his opinion about the choice.

TABLE XLIX  
 RESPONSES AS TO THE EXTENT MORE SUGGESTIONS FOR  
 VARIATIONS IN TEACHING METHODS ARE NEEDED

Response Categories	N	%	Total Respondents	Total in Group
Very Much	2	5.88	34	34
Much	10	29.41	34	34
Some	18	52.94	34	34
A Little	3	8.82	34	34
None	1	2.94	34	34

Teacher Responses to Rating of Some Sources

for Supplementation

In Table L, four respondents did not check Source 11--"Fact Sheets." However, Source 3--"Resource Persons"--was checked best by the majority of the respondents. This rating coincided with the ratings in Groups A-I and B-I. The latter group ranked this source as second best. Sources 10--"Individualize Through Student Experience"--and 9--"Individualize Through Community Visits"--were ranked second and third respectively. Group B-I rated both sources the best. The least ranked source was Source 6--"Recordings." It was rated same by Groups A-I and B-I.

Teacher Responses on Units in Vo-Ag Basic

Core Curriculum I

In LI, all units were indicated to have been taught by the respondents. But Units VI--"Fasteners"--and VII--"Farm Safety"--in the section

TABLE L  
 RESPONSES TO RATING OF SOURCES FOR SUPPLEMENTATION

Sources	Very Good 5		Good 4		Average 3		Fair 2		Poor 1		Total Re- sponse	Total N. in Group	Total Scores	Average Scores	Rank
	N	%	N	%	N	%	N	%	N	%					
1. Farm Magazines	16	47.00	9	26.47	7	20.59	1	2.94	1	2.94	34	34	140	4.12	8
2. Up-To-Date Textbooks	15	44.12	13	38.24	4	11.76	1	2.94	1	2.94	34	34	142	4.18	7
3. Resource Persons	23	67.65	10	29.41	1	2.94					34	34	158	4.65	1
4. Films and/or Video Tapes	13	38.24	15	44.12	6	17.65					34	34	143	4.21	6
5. Slides	12	35.29	21	61.76			1	2.94			34	34	146	4.29	4
6. Recordings	4	11.76	12	35.29	12	35.29	5	14.71	1	2.94	34	34	115	3.38	11
7. Photographs	6	17.65	14	41.18	8	23.53	6	17.65			34	34	122	3.59	9
Individualize Through:															
8. Teacher Personal Experience	15	44.12	13	38.24	5	14.71	1	2.94			34	34	144	4.24	5
9. Community Visits	22	64.71	10	29.41	1	2.94	1	2.94			34	34	155	4.56	3
10. Student Experience	24	70.59	7	20.59	3	8.82					34	34	157	4.62	2
11. Fact Sheets	11	32.35	8	23.53	7	20.59	4	11.76			30	34	116	3.41	10

on Agricultural Mechanics were less taught. The reasons given were "Facilities and Equipment Unavailable," "Not Enough Time," and "Others." Thirteen respondents indicated they did not teach Unit VI, and 11 respondents did not teach Unit VII. See Table LI for further details.

#### Teacher Responses on Units in Vo-Ag Basic

##### Core Curriculum II

In Table LII, one of the participating teachers did not respond at all. Therefore, the number of respondents was less by one than the number of the participants. However, the respondents indicated that all units in the curriculum were taught. But there was a striking difference in that some units in "Plant and Soil Science" (Units IV, VI, VIII, and IX) were among units least taught. This author observed that it was only in this group that this response was given. Previously, all of the less taught units were observed to be in Agricultural Mechanics. The other least taught units indicated by this group were Unit VII--"Introduction to Plumbing," Unit V--"Wood Fasteners," and Unit I--"Blueprint Reading." The reasons checked were "No Knowledge of Subject," "Content Too Deep," "Facilities and Equipment Unavailable," "Not Enough Time," and "Others."

#### Teacher Responses on Units in Vo-Ag Basic

##### Core Curriculum III

In Table LIII, one participating teacher did not respond at all, while another one did not check units in Section A through C and Section E through F. All units of the curriculum were shown to be attempted by the respondents. Units less taught were in Agricultural Mechanics.



TABLE LI

## RESPONSES TO UNITS IN VO-AG BASIC CORE CURRICULUM I

Section and Unit Number	No Response	Unit Taught		Reasons Unit Not Taught						
		Yes	No	No Knowl- edge	Content Too Deep	Facilities Equipment Limited	Little Time	Little Need	Too Elemen- tary	Other
Section A - Orientation & Careers:	21	11	2							2
I - Orientation to Vocational Agriculture	2	29	3							3
II - Careers in Agriculture	2	28	4							4
Section B - Leadership:	20	13	1							1
I - Introduction to Future Farmers of America		30	4							4
II - Duties & Responsibilities of FFA Members		31	3							3
III - Parliamentary Procedure and Public Speaking	1	31	2	1						1
Section C - Supervised Experience Programs:	9	23	2							2
I - Planning and Implementing the Supervised Occupational Experience Program	2	30	2							2
Section D - Animal Science	17	16	1							1
I - The Livestock Industry	3	30	1							1
II - Breeds of Livestock	2	30	2							2
III - Livestock Selection	2	30	2							2
IV - Livestock Feeding	3	28	3							3
Section E - Plant and Soil Science	16	14	4					2		
I - Plant and Soil Science	2	26	6					3		3
Section F - Agricultural Mechanics	18	14	2							2
I - Orientation and General Safety	1	28	5							5
II - Arc Welding	1	29	4							4
III - Metal Work	2	24	8		1			3		4
IV - Introduction to Oxyacetylene Cutting	2	25	7					1		6
V - Oxyacetylene Cutting	2	26	6					1		5
VI - Fasteners	4	17	13			1		3	2	7
VII - Farm Safety										

TABLE LII

## RESPONSES TO UNITS IN VO-AG BASIC CORE CURRICULUM II

Section and Unit Number	No Response	Unit Taught		Reasons Unit Not Taught							
		Yes	No	No Knowl- edge	Content Too Deep	Facilities Equipment Limited	Little Time	Little Need	Too Elemen- tary	Other	
Section A - Plant and Soil Science:	16	12	4	1							2
I - Marketing Crops		20	12	1				3	3		5
II - Fertilizer	1	20	11	1		2		2	1		5
III - Improving Native Rangeland		19	13	2		2		4			5
IV - Establishing & Improving Tame Pastures		21	11	1		2		3			5
Section B - Animal Science:	17	12	3								3
I - Reproductive Organs of Farm Mammals		26	6								6
II - Collecting and Examining Semen		20	12	2	1	2		1	1		5
III - Artificial Insemination		24	8					1	1		6
IV - Fertility & Pregnancy Testing		19	13	3	1	1		1	1		6
V - Market Grades & Classes of Livestock		28	4								4
VI - Marketing Livestock & Market Agencies		26	6								6
VII - Livestock Price Trends & Cycles		26	6								6
VIII - Selecting & Breeding Livestock		25	7					1			6
Section C - Supervised Training Program Farm Business Management:	15	11	6	2							4
I - Analysis & Evaluation of Super- vised Farm Training Program		24	8	1				2			5
II - Acquisition of Farm Land		21	11	2				4			5
III - Budgeting	2	17	13	2	1			4			6
Section D - Leadership:	16	9	7					2			5
I - Importance of Public Speaking	1	24	8	2				2			4
II - Developing and Delivering a Speech	2	24	7	1				2			4
Section E - Career Selection:	14	14	4								4
I - Career Selection	1	26	5								5
II - Human Relations	2	22	8					1			7
Section F - Agricultural Mechanics:	20	9	3								3
I - Fundamentals of Electricity	1	21	10	1		2		1			6
II - Electrical Safety		19	13	2		3		2			6
III - Electrical Wiring Practices		17	15	2		3		3			7
IV - Planning the Wiring Layout	1	15	16	2		4		3			7
V - Electric Motors	1	7	24	5	1	7		4			7
VI - Using the Farm Level	1	19	12	1		2		2			7
VII - Brush Painting	1	13	18			3		6	3		6
VIII - Engine Operation	1	12	19			5		7			7
IX - Servicing Small Engines	1	13	18	2		5		5			6

They were Unit V--"Electric Motors," Unit VIII--"Engine Operation," Unit VII--"Brush Painting," and Unit IX--"Servicing Small Engines." The reasons given were the same as those in Vocational Agriculture II. See Table LIII for additional details.

#### Teacher Responses on Units in Vo-Ag Basic

##### Core Curriculum IV

In Table LIV, two of the participating teachers did not respond at all. The number of respondents would be less by two. All units were indicated to have been taught by the respondents. Another striking difference in this group as observed by the author was that there were more units least taught than in other groups. These units, however, were in Agricultural Mechanics, and they were Unit IV--"Servicing the Tractor-Air Supply System," Unit VII--"Servicing the Tractor-Lubrication System," Unit VIII--"Servicing the Tractor-Fuel System," Unit IX--"Ignition System," and Unit X--"Servicing the Tractor-Cooling System." Nearly all the reasons in the questionnaire were checked as is indicated below: "No Knowledge of Subject," "Content Too Deep," "Facilities and Equipment Unavailable," "Not Enough Time," "Not Needed in My Community," and "Others."

Table LIV, which follows, illustrates the above mentioned results. The negativity toward units in Agricultural Mechanics can be clearly seen from the table. Of the 11 divisions under Agricultural Mechanics, only three of those divisions were shown to have been taught by a majority of the respondents.

TABLE LIII

## RESPONSES TO UNITS IN VO-AG BASIC CORE CURRICULUM III

Section and Unit Number	No Response	Unit Taught		Reasons Unit Not Taught							
		Yes	No	No Knowledge	Content Too Deep	Facilities Equipment Limited	Little Time	Little Need	Too Elementary	Other	
Section A - Agricultural Chemicals:	15	12	6								
I - Agricultural Chemicals		21	12	2	1	1		2			3
								3			6
Section B - Leadership:	15	16	2								2
I - Future Farmers of America		29	4								4
II - Becoming a Good Leader		29	4								4
Section C - Supervised Farm Training:	20	11	2								2
I - Analysis and Evaluation of Supervised Farm Training Program		2	27	4				1			3
II - Farm Credit		3	25	5	1			1			3
Section D - Plant & Soil Science:	13	15	5								3
I - Elementary Study of Soils		26	7					1			6
II - Soil Conservation Practices		23	10					3			7
III - Plant Growth & Reproduction		23	10					3			7
IV - Seed Selection		16	17	1				5	1		7
V - Land Preparation		22	11			3		3			7
VI - Chemical Weed Control		20	13			1		3	1		6
VII - Plant Insect Control		21	12					6			7
VIII - Plant Diseases		22	11			1		4			7
IX - Landscaping		16	17	3	1			4	1		6
Section E - Animal Science:	15	16	2								2
I - Animal Nutrients		1	29	3							3
II - Composition and Classification of Feeds		1	28	3							3
III - Animal Digestion		1	28	4							4
IV - Maintaining Animal Health		1	28	4							4
V - Diseases		1	28	4							4
VI - Parasites		1	23	4							4
Section F - Agricultural Mechanics:	19	10	4	1							3
I - Blueprint Reading		3	15	15	2	1		8			3
II - Position Welding		1	28	4	1						3
III - Oxyacetylene Fusion Welding		1	26	6			1	2			3
IV - Oxyacetylene Brazing		1	23	9			1	4			4
V - Wood Fasteners		2	15	16			2	6	2	1	5
VI - Figuring Bills of Materials		2	22	9				4			5
VII - Introduction to Plumbing		2	14	17		1	4	7			5

TABLE LIV

## RESPONSES TO UNITS IN VO-AG BASIC CORE CURRICULUM IV

Section and Unit Number	No Response	Unit Taught		Reasons Unit Not Taught						
		Yes	No	No Knowl- edge	Content Too Deep	Facilities Equipment Limited	Little Time	Little Need	Too Elemen- tary	Other
<b>Section A - Supervised Training Program</b>										
Farm Business Management:	18	12	2							2
I - Farm Records - Farm Inventories		26	6	1			1			4
II - Farm Records - Net Worth Inventories		27	5	1						4
III - Financing the Farm Business: Sources of Credit	3	24	5	1						4
IV - Insurance	1	21	10	2			3			5
V - Tax Management		17	15	6	1		3			5
VI - Machinery & Equipment Management	2	18	12	2			4			6
VII - Custom Services Versus Ownership		14	18	2			7	3		6
VIII - Analysis & Evaluation of Supervised Farm Training Program		22	10	1	1		3			5
<b>Section B - Leadership &amp; Careers:</b>										
I - Developing the FFA Program of Activities	1	26	5				2			3
II - Young Farmer Association of Oklahoma		19	13				7	1		5
III - Selecting a Career		26	6				2			4
<b>Section C - Plant &amp; Soil Science:</b>										
I - Land Judging	19	10	3				1			2
II - Soil Sampling		25	7	2			2			3
III - Soil Survey Reports & Legal Land Description		25	7			2	3			2
IV - Soil Conservation Service & Conservation Districts		24	8	1	2		2			3
V - Agriculture Stabilization & Conservation Service		20	12				6			6
		18	14				7	1		6
<b>Section D - Agricultural Mechanics:</b>										
I - Building Farm Fences	18	11	3			2	3			3
II - Rafter Framing		23	9			1	2			5
III - Farm Utility Buildings		17	15		1	2	5			7
IV - Servicing the Tractor Air Supply System		18	14		1	1	6			6
V - Servicing Wheel Bearings		12	20	1	2	4	5	1		7
VI - Battery Service		13	19	1	1	5	4	1		7
VII - Servicing the Tractor Lubrication System		12	20	1	1	5	5	1		7
VIII - Servicing the Tractor-Fuel System		11	21	1	1	6	5	1		7
IX - Ignition System	1	11	20	3	1	6	5			5
X - Servicing the Tractor Cooling System		12	20	3		6	5			6
XI - Spray Painting		11	21	2	1	6	5			7
		15	17	2	1	5	2			7

### Summarized Comparative Analyses

In most cases, only the first, second, third, and least responses were indicated in the numerical order. Also, only the actual number of the item in the questionnaire was quoted. For identification of the particular item, refer to the relevant table(s).

#### Teacher Responses to Best Description of a Curriculum

<u>Group A-I</u>	<u>Group A-II</u>	<u>Group B-I</u>	<u>Group B-II</u>
1. Statement 8	Statement 8	Statement 8	Statement 1
2. Statement 4	Statement 1	Statement 1	Statement 8
3.	Statement 4	Statement 2	Statement 4
10. Statement 5	Statement 5	Statement 5	Statement 5

#### Teacher Responses to Concepts of Curriculum

##### Development

<u>Group A-I</u>	<u>Group A-II</u>	<u>Group B-I</u>	<u>Group B-II</u>
1. Concept 3,4,5	Concept 5	Concept 5	Concept 1
2. Concept 11	Concept 3	Concept 3,4	Concept 2
3.	Concept 4		Concept 7
11. Concept 2	Concept 1	Concept 1	Concept 5

#### Teacher Responses to the Approximate Time

##### Core Curriculum Is Followed

The first choice of all the groups was 51 to 75 percent and seconded by 26 to 50 percent.

Teacher Responses to Relevancy of the Core

Materials by Years

Majority of respondents in all groups indicated that the core materials were very relevant at the Fourth Year. Other responses were not significant.

Evaluation of Certain Items in Terms of Format

	<u>Group A-I</u>	<u>Group A-II</u>	<u>Group B-I</u>	<u>Group B-II</u>
1.	Item 3	Item 1	Item 3	Item 3
2.	Items 1,5	Items 5,6	Item 6	Item 2
3.		Item 3	Items 1,2	Item 5
7.	Item 4	Item 4	Items 7,4	Items 4,7

Teacher Responses to Frequency Curriculum

Should Be Revised

	<u>Group A-I</u>	<u>Group A-II</u>	<u>Group B-I</u>	<u>Group B-II</u>
1.	Whenever Necessary	Whenever Necessary	Whenever Necessary	Whenever Necessary
2.	5 Years	3 Years	3 Years	3 & 5 Years
3.	3 Years	5 Years		

Teacher Responses to Percent of Core Units

Needing Supplementation

	<u>Group A-I</u>	<u>Group A-II</u>	<u>Group B-I</u>	<u>Group B-II</u>
1.	11-25%	11-25%	11-25%	11-25%
2.	26-40%	More Than 80%	Less Than 10%	26-40%
3.	61-80%	26-40%	26-40%	More Than 80%

Teacher Responses as to the Extent More  
Suggestions Are Needed for Variations  
in Teaching Methods

	<u>Group A-I</u>	<u>Group A-II</u>	<u>Group B-I</u>	<u>Group B-II</u>
1.	Some	Some	Some	Some
2.	Much	Much	A Little	Much
3.	A Little	Very Much	Much	A Little

Teacher Responses to Rating Some Sources  
for Supplementation

	<u>Group A-I</u>	<u>Group A-II</u>	<u>Group B-I</u>	<u>Group B-II</u>
1.	Source 3	Source 9	Sources 9,10	Source 3
2.	Source 10	Sources 5,10	Source 3	Source 10
3.	Source 9	Sources 3,8	Source 8	Source 9
11.	Source 6	Source 7	Source 6	Source 6

Teacher Responses to Units in Vo-Ag Basic  
Core Curriculum I, II, III and IV

All units in each curriculum were indicated to have been taught by the respondents. However, some units, especially in the Agricultural Mechanics were not much taught by the teachers. Most of the units generally affected were these: Vo Ag I--Unit VI; Vo Ag II--Units I and V; Vo Ag III--Units IV and VII; and Vo Ag IV--Units II, VII, VIII, and IX. In each case, the reasons usually given were "Content Too Deep," "Facilities and Equipment Unavailable," "Not Enough Time," and "Others."

As far as the author followed this analysis, he did not observe any remarkable differences in the responses of the groups and their respective subdivisions, i.e. within groups and between groups. There were, however, some instances of insignificant differences which could merely



be noted and then overlooked. The analysis showed that long years of teaching did not seem to differ significantly with short years of teaching. In fact, Patton (24) arrived with similar trends and conclusions in his study. But the author feels that normally there should be clear cut differences between the responses of teachers with more than eight years teaching experience and those with less than eight years teaching experience. A possible explanation for these similar responses might be that all the teachers involved in the study indicated their honest feelings and appreciations for all the vocational agricultural curricula regardless of their teaching experiences. The author could therefore ascribe these similar responses as good attributes to the Basic Core Curricula.

## CHAPTER V

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

#### Summary

The purpose of this study was to review the four Oklahoma Basic Core Curriculum Guides for Vocational Agriculture in order to determine the extent or possibility of adopting the guides so as to introduce vocational agriculture into the secondary schools of Nigeria. To accomplish this purpose, the following objectives were, therefore, formulated: (1) to review the Oklahoma Basic Core Curriculum for Vocational Agriculture; (2) to study the development of the Curriculum, (3) to look into some concepts and practices in the Core Curriculum; (4) to evaluate the content of materials, need for supplementation, and the sources for supplementation; (5) to determine the acceptance and usage of the Core Curriculum; (6) to examine the possibility of either adopting or modifying the Core Curriculum for use in the secondary schools of Nigeria; (7) to show young Nigerians that agriculture can also be a desirable occupation having features deserving recognition and creating satisfaction and pride too. The author then hoped some of the findings from the study would have implications for introducing vocational agriculture in Nigeria.

The researcher developed a questionnaire in order to solicit responses on some concepts, practices, norms, and usages of the Basic Core Curriculum Guides. A supplementary questionnaire was developed by the

State Department of Vocational and Technical Education, Stillwater, Oklahoma, so as to find from the participating teachers which units in each curriculum were taught as well as which units were not taught. The questionnaire was distributed to all vocational agriculture teachers enrolled in a credit seminar held in connection with the Seventh Annual Conference of Vocational and Technical Education held in August 12-16, 1974.

Of the total of 102 questionnaires submitted, all were returned, but due to the delay in return, only 95 were analyzed. Data were collated, tabulated, presented as well as discussed by the author in the previous chapter. For easy differentiation, the author divided the participating teachers into Cooperating and Non-Cooperating groups. Each group was again subdivided into teachers with more than eight years teaching experience and those with less than eight years teaching experience.

#### Summary of Findings

1. Teachers indicated that the curriculum should reflect the needs and concerns of the student and the society.
2. Teachers agreed that curriculum development must include a maximum amount of "learning by doing."
3. Teachers indicated they were using the Basic Core Curriculum Guides to account for 60 percent of their instruction time.
4. Teachers showed that the Core contents were relevant and sufficiently adequate for teaching agricultural objectives and programs. All units were taught and only 26 to 70 percent of the Core units were needing supplementation.

5. Teachers felt that the curriculum should only be revised whenever necessary in order to meeting changing and emerging needs, situations, or challenges.

6. Teachers indicated that only some suggestions were needed for variations in teaching methods.

7. Teachers agreed that individualizing through community visits as well as student experiences and resource persons were very good sources for supplementation.

8. Teachers did not show significant variations in the overall responses about their feelings, appreciations, acceptances, and uses of the Curriculum Guides.

#### Conclusions

Using the analysis of the data, the author feels justified to make the following conclusions:

1. That the curriculum accounts for 60 percent of the teacher's instruction time

2. That the curriculum is generally accepted, appreciated, and widely used; therefore solving the teacher's problem of what to teach

3. That the curriculum is relevant and sufficiently adequate for teaching agricultural programs and objective with all units being taught and needing little supplementation

4. That the curriculum should be revised whenever a need arises or if it is deemed necessary to meet emerging situations and/or challenges

5. That teaching experiences--Cooperating and Non-Cooperating teachers--do not vary significantly in the general overall responses about feelings, appreciations, acceptances, and use of the curriculum

Some inferences are as follows:

1. That the curriculum is adaptable to local communities and can be personalized to each vocational agriculture student with no indication as yet that the curriculum cannot be used in any place in the State of Oklahoma

2. That from the teachers' responses, the supervisory districts do not vary a great deal in the overall response about the acceptance and use of the curriculum

3. That the approach taken in the curriculum development is ideally useful and should be continued or maintained in developing more and new curricula

4. That teachers are still innovative in their teaching as Patton (24) concluded

#### Recommendations

1. A standard format in sequencing unit(s) of instruction should be adopted for uniformity. The teachers involved in this study did not indicate uniformity in their evaluation of certain items in terms of format of units of instruction.

2. Teachers should have a better idea or explanation of a curriculum as their ranking of best description of curriculum in the study was rather unprofessional.

3. Teachers should be better informed of the value of farm magazines as sources for supplementation and motivation. In the study, they were not rated highly by any group. But farm magazines and fact sheets are among the most readily available sources for supplementation.

4. A search should be made on the reasons commonly cited why units

in Agricultural Mechanics are less taught. All the least taught units are in Agricultural Mechanics.

5. Curriculum development should continue to be based on the needs of the student and the society.

6. Curriculum development must continue to provide or incorporate opportunities for application and evaluation of learning.

7. Students (target population) should be involved as well as screened in determining course objectives (objectives for instruction).

8. Curriculum should be revised whenever a need arises or a situation deems it necessary. Curriculum revision should not involve basic changes but updating, remodeling, and some refinements.

9. Career education (awareness) should be intensified so as to help students make logical and sound choices among the many and varied or complexing careers. One of the current issues and complaints in Vocational Technical Education according to Dr. Ellis (38) is that skilled personnel are being produced without work to do. It appears that the work market is saturated with skilled personnel. In recognition of this issue, the School of Occupational and Adult Education in the Oklahoma State University will conduct a series of workshops on career education across the nation under a United States Office of Education grant of \$283,273 (39). Dr. Lloyd Briggs (39) stated that career education is based on the concept that all education should be related in some way to the real world and to the realities of one's current and expected future life as a productive member of society. He, therefore, concludes in the following manner:

The further rationale for career education is that if logical career choice results in general from career awareness, career orientation and career exploration, then this perhaps should be an integral part of the school curriculum (p. 4).

Implications and Recommendations for the  
Improvement of Farming in Nigeria

The study has undoubtedly shown that the entire vocational agriculture curriculum is generally accepted as well as widely used. Another striking feature is that it is adaptable to local communities. Also, from the study, the value and magnitude of vocational education which includes vocational agriculture can be comprehended easily, in both the State of Oklahoma, United States of America, and Tanzania, Africa. The author, therefore, feels that there is no reason why vocational agriculture should not also be a success in the secondary schools of Nigeria, especially since a "felt need" exists.

As a matter of urgency and convenience, the author would like to recommend provisionally that, at least, Basic Core Curriculum I should be adopted for a try-out. The units in the curriculum will definitely be practical in Nigeria. They will also serve Nigerian needs. The ideas in the units are basic in nature. In most cases, basic ideas are transferable, adoptable as well as applicable in most areas other than place of origin. However, whenever necessary, modifications and/or substitutions will be made for the units to adapt to Nigerian environment. This should also cater for any deficiencies that may arise. Some assistance may be obtained from some agricultural schools. In his study, Okorie (18) observed that journals, magazines, bulletins, and other teaching aids were virtually non-existent in secondary schools as well as in institutions of higher learning. But the explanation of this is that the educational pattern of Nigeria is very much avocational. The curriculum in most schools is designed purposely to enable students to

pass their comprehensive final examinations.

The author has already suggested that Kano State, the author's home state, should be the pilot or pioneer area to try the implications of this study. The author will have the chance to give guidance and direction for successful adoption and implantation of the innovation. The author hopes that thereafter the innovation will spread through the country. To facilitate adoption, the author hopes to hold discussions with his superiors in the Ministry of Agriculture and Natural Resources as well as the Ministry of Education. Both ministries will be involved in the entire matter of adopting and launching vocational agriculture in the secondary schools of Kano State.

The author would like to make these recommendations:

1. A full scale government support and attention will be needed by declaring a policy of vocational education in the secondary schools.
2. There should be a closer cooperation between the Ministries of Agriculture and Education over policies in agricultural education.
3. Universities and post-secondary agricultural institutions should be contacted frequently for assistance in any form.
4. Nigerian universities should step up producing agricultural teachers so as to teach vocational agriculture in the secondary schools. To begin with, some vocational agriculture teachers should be recruited from the United States of America to help with the ground work.
5. Nigerian government should sponsor graduates of post-secondary agricultural institutions for further education in colleges and universities.
6. Teaching facilities and amenities should be made available by the government. These will cater for student tours and trips, financing



and encouraging agricultural projects and societies or organizations, introduction of machinery and equipment for use on school farms, and enlargement of the agricultural curriculum.

7. For agricultural students to become established in farming, these outstanding obstacles must be overcome: land (tenure) fragmentation, lack of capital, poor marketing and pricing systems, absence of farm machinery and equipment, and inefficient extension service.

8. Nigerian government should from time to time tap on the expertise of specialists in vocational and technical education.

#### Conclusion

For Nigeria to develop her agricultural resources with the particular purpose to raise food production against the forecasted world famine, the young elements must be attracted to take farming as a career and profession too. One of the approaches to achieve this end is to introduce vocational agriculture into the secondary schools so that students can be properly exposed as well as orientated to agriculture. They will then recognize agriculture as a desirable occupation with features of satisfaction and pride. The sentiments of Eke (20) and Oyenuga (9) are hereby recalled as follows:

Unless the student, right from the moment he is admitted into the . . . school, is taught to use not only his head but also his hands and is encouraged not to despise manual labour, the present craze for white-collar jobs by our young people would lead to disaster sooner or later (20, p. 2).

So long as agriculture in Nigeria and other parts of West Africa continues to offer no other equipment than a cutlass, a hoe and an axe and for no other reward than merely to keep body and soul together, so long will it continue to offer no attraction to the primary or medium school-leaver . . . and so long will the army of the unemployed continue to mount in the town and cities (9, p. 1).

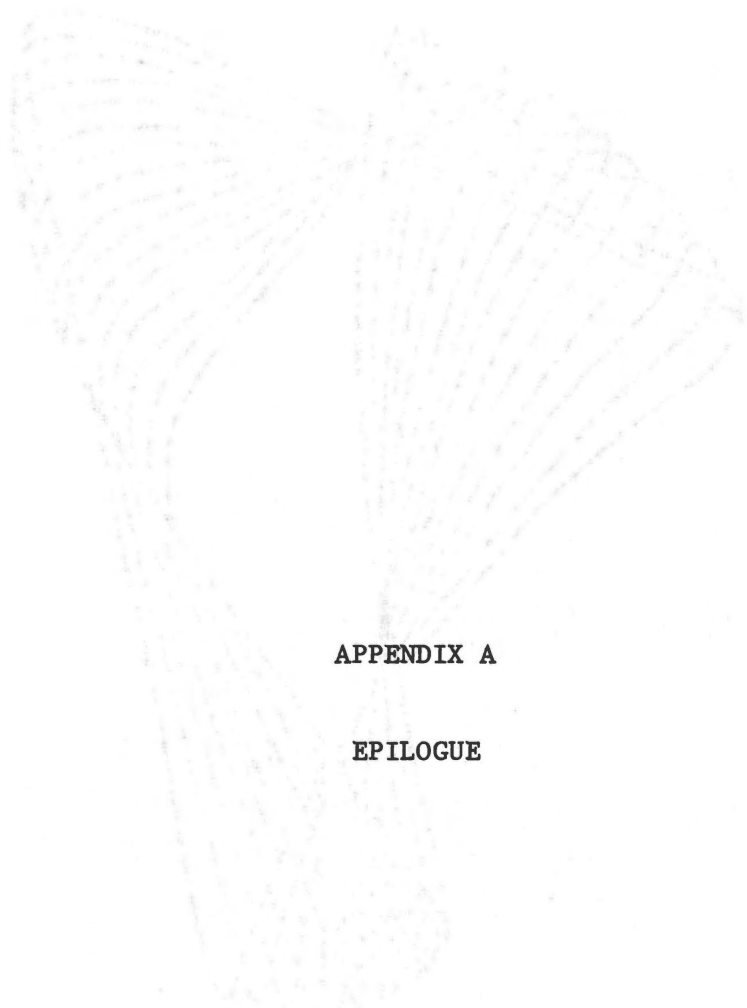
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## APPENDIXES



**APPENDIX A**

**EPILOGUE**

LOS ANGELES STATE UNIVERSITY

THESE THESIS

ON COTTON FIBER

## APPENDIX A

### AN EPILOGUE

#### The Pride in Agriculture--A Call to the Farm

Farming is one of the most pleasant occupations. As a matter of fact, nearly everybody is interested in the cultivation of the soil and in the raising of animals. Indeed, there seems to be natural craze to work with the soil, which comes to everyone sometime during life.

The farmer works with living plants and animals and with all the natural forces in soil, air, water, and sunshine that affect the growth of plants and animals. Therefore, farming demands intelligence. Boys and girls should fully realize that the farm offers a good field for the exercise of all the scholastic (academic) skills that they can attain. Although farming is a special business that requires broad and thorough knowledge, yet one may do fairly successful work on the farm while he is learning the underlying principles of the science and art of agriculture.

There has been a false impression that tilling the soil is a hard and low kind of labor, otherwise a cheap drudgery. But great minds in all ages have considered farming a most desirable and prestigious occupation. After all, all accomplishments come through some form of labor, and labor becomes a successful pleasure as well as an inspiration when one does his work with interest and intelligence. Work is wholesome and no other kind of work which leads to longer, happier lives and greater developments of mind and body than of producing useful things from the

soil. Beside the economic viewpoint, that is why agriculture is said to be the backbone of any country. Grayson Mitchell (40) quotes Booker T. Washington, thus:

To those of my race who depend on bettering their condition in a foreign land . . . I would say: 'Cast down your bucket where you are . . . . Cast it down in agriculture, mechanics, in commerce, in domestic science, and in the professions. No race can prosper till it learns that there is as much dignity in tilling a field as in writing a poem' (p. 78).

Farming is continually becoming more pleasant and more profitable under ideal conditions. The present oil scourge puts farmers in a precarious condition. With the growth of knowledge and the development of machinery and methods which enable the farmer to do more work with less effort, there is more inducement to lead this kind of life. In these modern times, a successful farmer can build a house that has every convenience and luxury to be found in average urban homes. Again, he can produce larger and better crops with less labor than formerly and he has as much or more leisure for study and pleasure.

In short, the people on the farm feed and clothe the world and do much to supply the world with strong men and women of force and virtue. The hope of the world is greatness of character; hence, it is stated that revolution is fought in the mind. Living close to the soil and in harmony with nature enhance development of character. Therefore, anyone who decides to be a farmer may well be proud of the life work he has chosen. In the final analysis, vocational agriculture develops the mind to imagine as well as provides the skills to do. A mind is a terrible thing to waste.

Peace is better than oil, and food is the basis for peace; therefore, agriculture supersedes peace and oil.





**APPENDIX B**

**QUESTIONNAIRE**

ILLINOIS STATE UNIVERSITY

DEPT. OF...

...COLLEGE

A SURVEY OF CONCEPTS AND PRACTICES IN CURRICULUM DEVELOPMENT  
AND USAGE FOR VOCATIONAL AGRICULTURE

Part A. Concepts or Ideas of What Constitutes a Curriculum

Rank the following statements in terms of how you feel they best describe a curriculum.

- \_\_\_\_\_ 1. All the learning experiences the students have while attending school.
- \_\_\_\_\_ 2. The subject matter and activities involved in a specific course or discipline.
- \_\_\_\_\_ 3. The combination of courses pursued by a student, both required and elective courses.
- \_\_\_\_\_ 4. All the planned learning outcomes for which the school is responsible.
- \_\_\_\_\_ 5. A well planned "core" of subject matter concepts and information desirable for the learner, including instructional sequence.
- \_\_\_\_\_ 6. A well developed series of instructional guides and/or workbooks containing outlines of subject matter to be learned.
- \_\_\_\_\_ 7. The general overall plan of the content or specific materials for a course of instruction.
- \_\_\_\_\_ 8. A course of study in a school.
- \_\_\_\_\_ 9. All instruction which may lead to a productive life as a useful citizen.
- \_\_\_\_\_ 10. A combination of activities to accomplish greater mental and physical development.

Part B. Concepts of Curriculum Development Applied to Vocational Agriculture.

Please mark your acceptance of the following statements according to the scale given: Strongly Agree (SA), Agree (A), Undecided (U), Disagree (D), Strongly Disagree (SD).

1. As a teacher, I find I have little time to be concerned about what to teach. SA A U D SD
2. A good textbook and/or workbook is the best source for determining what to teach. SA A U D SD
3. A good teacher uses all subject matter as a vehicle for preparing the learning for "making decisions." SA A U D SA
4. The curriculum should reflect the needs and concerns of the society (community) in which

- the learner lives. SA A U D SD
- 5. The curriculum and/or learning experiences must include a maximum amount of experiential learning, i.e. "learning by doing." SA A U D SD
- 6. Subject matter in the curriculum is best presented through a performance objective approach. SA A U D SD
- 7. Final decision on curriculum should be made by the teacher without any influence, i.e. principals, school districts, school department chairmen, curriculum guides. SA A U D SD
- 8. The teacher and the learner should have free choice in curriculum development. SA A U D SD
- 9. Best sources of objectives for developing a curriculum are the learner, the society, and the subject matter. SA A U D SD
- 10. Objectives for instruction should largely be developed soon after the first few days of classwork. SA A U D SD
- 11. Objectives for instruction should be developed well in advance of the beginning of the school term. SA A U D SD

Your comments, if any:

Part C. Evaluation of Oklahoma Core Curriculum for Vocational Agriculture.

1. Please check the approximate time you follow the core curriculum in your present teaching.

	Less Than 10%	10-25%	26-50%	51-75%	More Than 75%
Vo Ag I					
Vo Ag II					
Vo Ag III					
Vo Ag IV					
Ag Mechanics (if taught as separate course)					

2. For each of the years, check the statements applicable:

	Year 1: Materials Too Advanced	Year 2: Materials Too Easy	Year 3: Materials Not Relevant	Year 4: Materials Very Relevant
Vo Ag I				
Vo Ag II				
Vo Ag III				
Vo Ag IV				
Ag Mechanics				

Your comments, if any:

3. Circle your evaluation of certain items in terms of format: Very High (VH), High (H), Medium (M), Low (L), Very Low (VL).

(a) General objectives	VH	H	M	L	VL
(b) Terminal objectives	VH	H	M	L	VL
(c) Specific objectives	VH	H	M	L	VL
(d) Suggested activities	VH	H	M	L	VL
(e) Instructional materials	VH	H	M	L	VL
(f) Information sheet	VH	H	M	L	VL
(g) Quiz	VH	H	M	L	VL

Your comments, if any:

4. How often would you have liked a curriculum to be revised:

3 yrs.      5 yrs.      8 yrs.      10 yrs.      Whenever Necessary

Your comments, if any:

Part D. Concepts as to Supplementing the Oklahoma Core Curriculum.

1. What percent of the Oklahoma "core" units need use of additional materials or supplements:

- \_\_\_\_\_ (a) less than 10%
- \_\_\_\_\_ (b) 11 - 25%
- \_\_\_\_\_ (c) 26 - 40%
- \_\_\_\_\_ (d) 41 - 60%
- \_\_\_\_\_ (e) 61 - 80%
- \_\_\_\_\_ (f) more than 80%

2. To what extent are more suggestions for variation in teaching methods needed:

- \_\_\_\_\_ (a) Very Much
- \_\_\_\_\_ (b) Much
- \_\_\_\_\_ (c) Some
- \_\_\_\_\_ (d) A Little
- \_\_\_\_\_ (e) None

Your opinions, if any:

3. How would you rate each of the following as sources for supplementation?

	Very Good	Good	Average	Fair	Poor
(a) Farm magazines					
(b) Up-to-date textbooks					
(c) Resource persons (specialists)					
(d) Films and/or video tapes					
(e) Slides					
(f) Recordings					
(g) Photographs					
(h) Individualize through					
(1) Teacher personal experience					
(2) Community visits					
(3) Student experience					
(i) Fact sheets					

Your comments, if any:





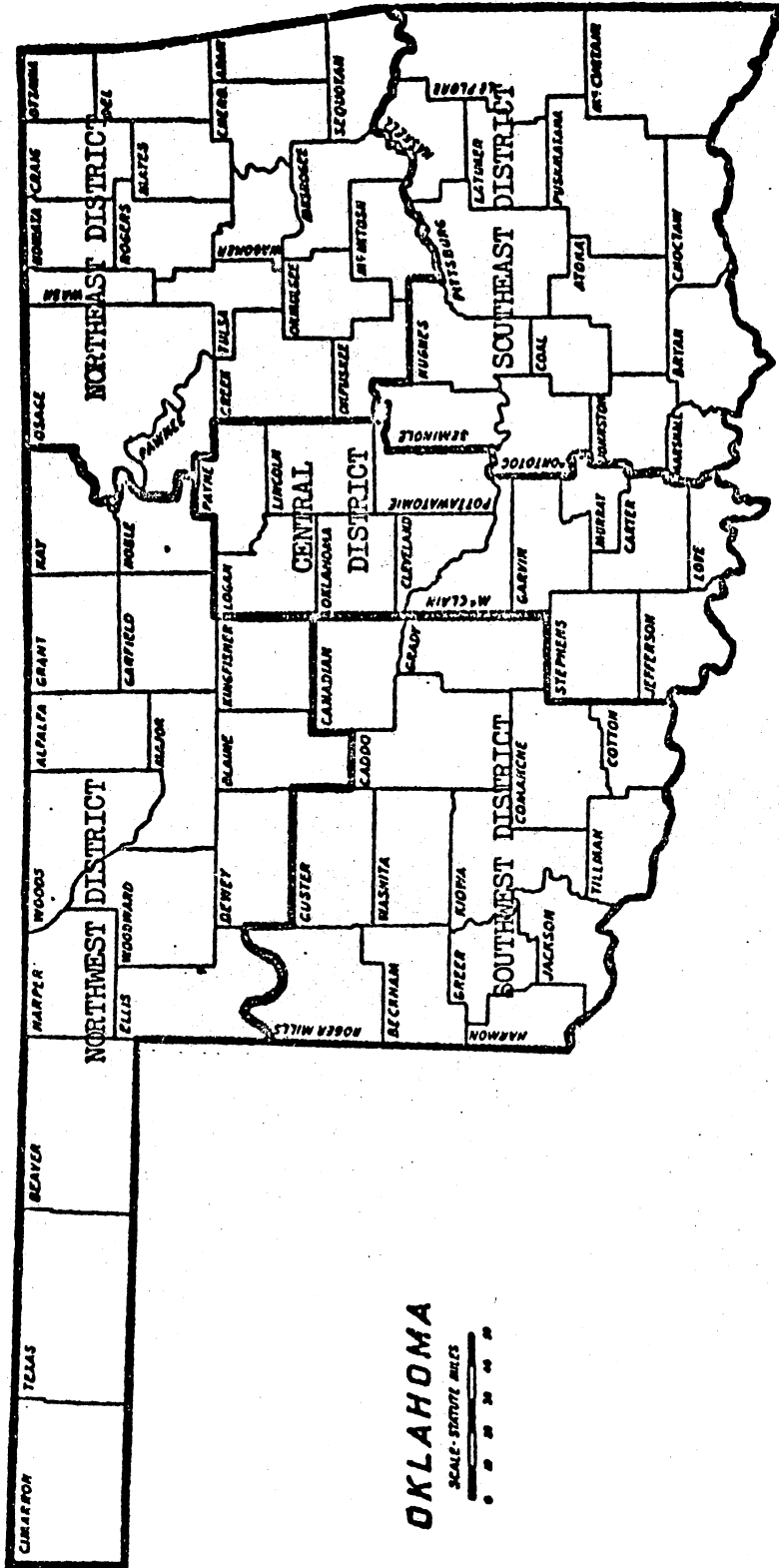






APPENDIX C

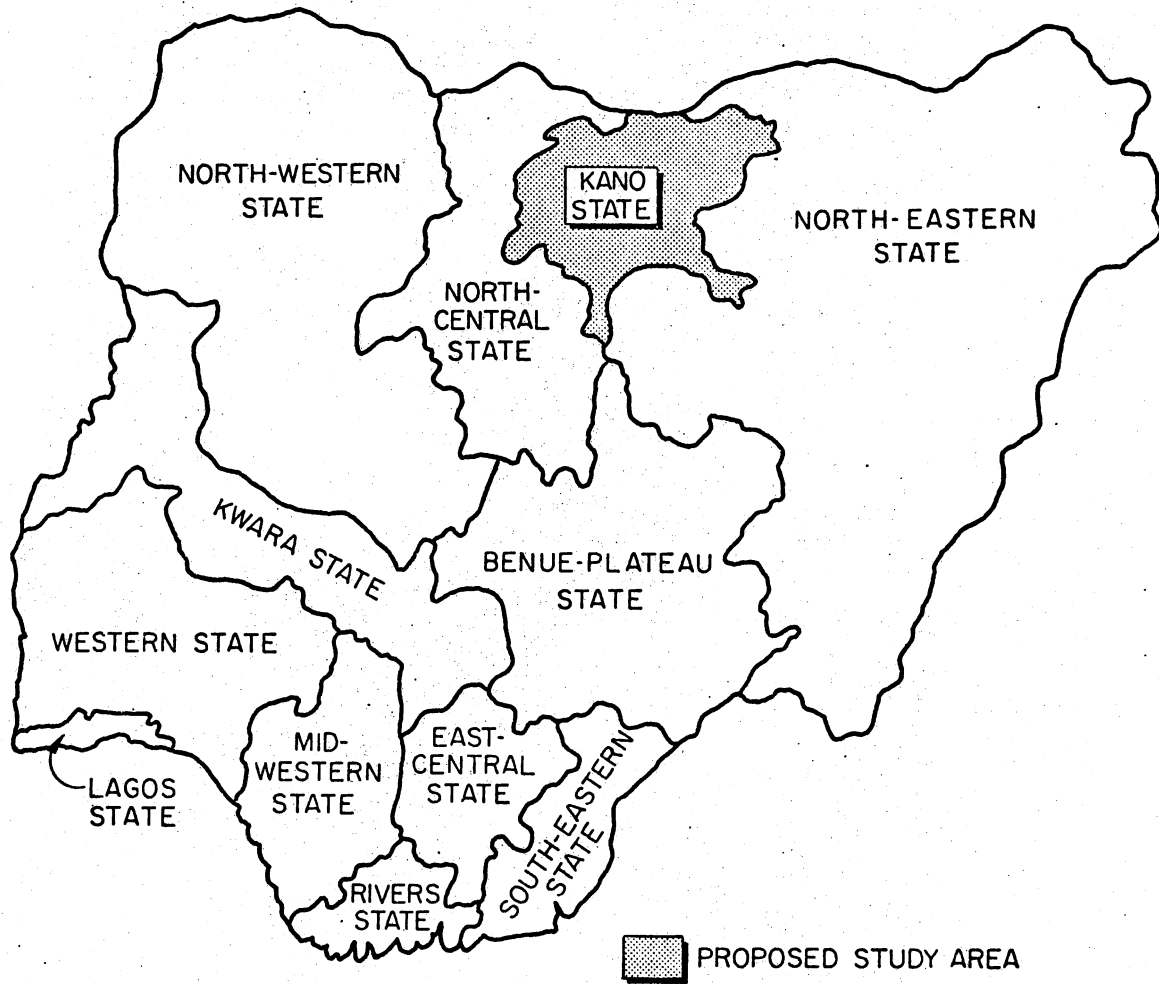
OKLAHOMA VO-AG SUPERVISORY DISTRICTS



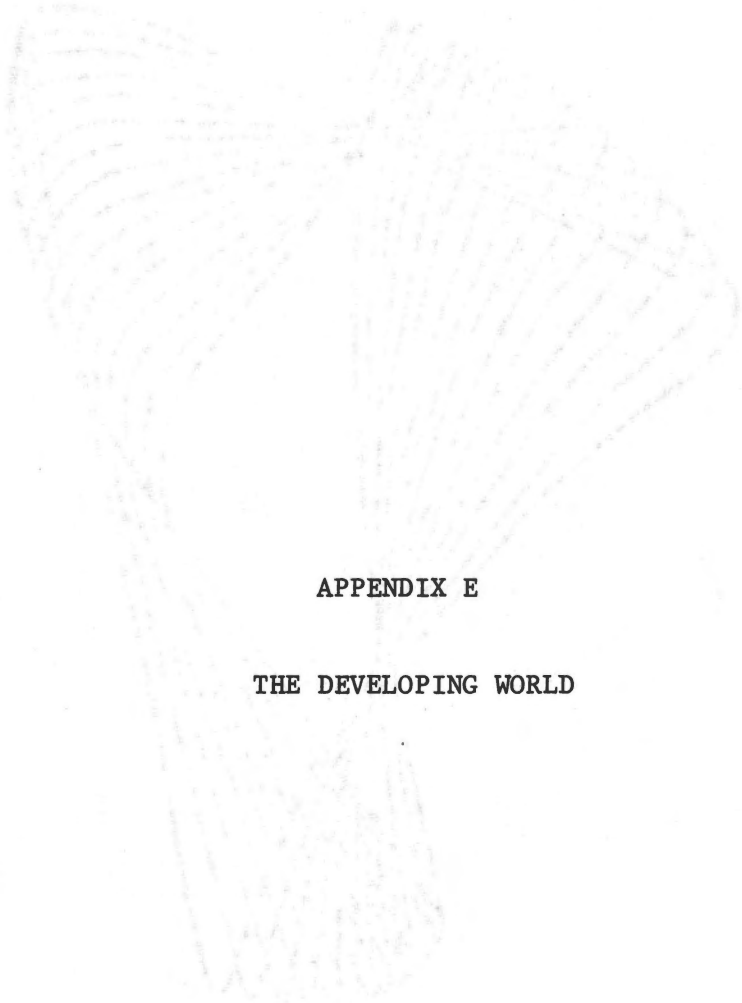
OKLAHOMA SUPERVISORY DISTRICTS

APPENDIX D

TWELVE STATES OF NIGERIA



TWELVE STATES OF NIGERIA



APPENDIX E

THE DEVELOPING WORLD

ORLANDO STATE UNIVERSITY

Texas Book

1972, COTTON - 1972



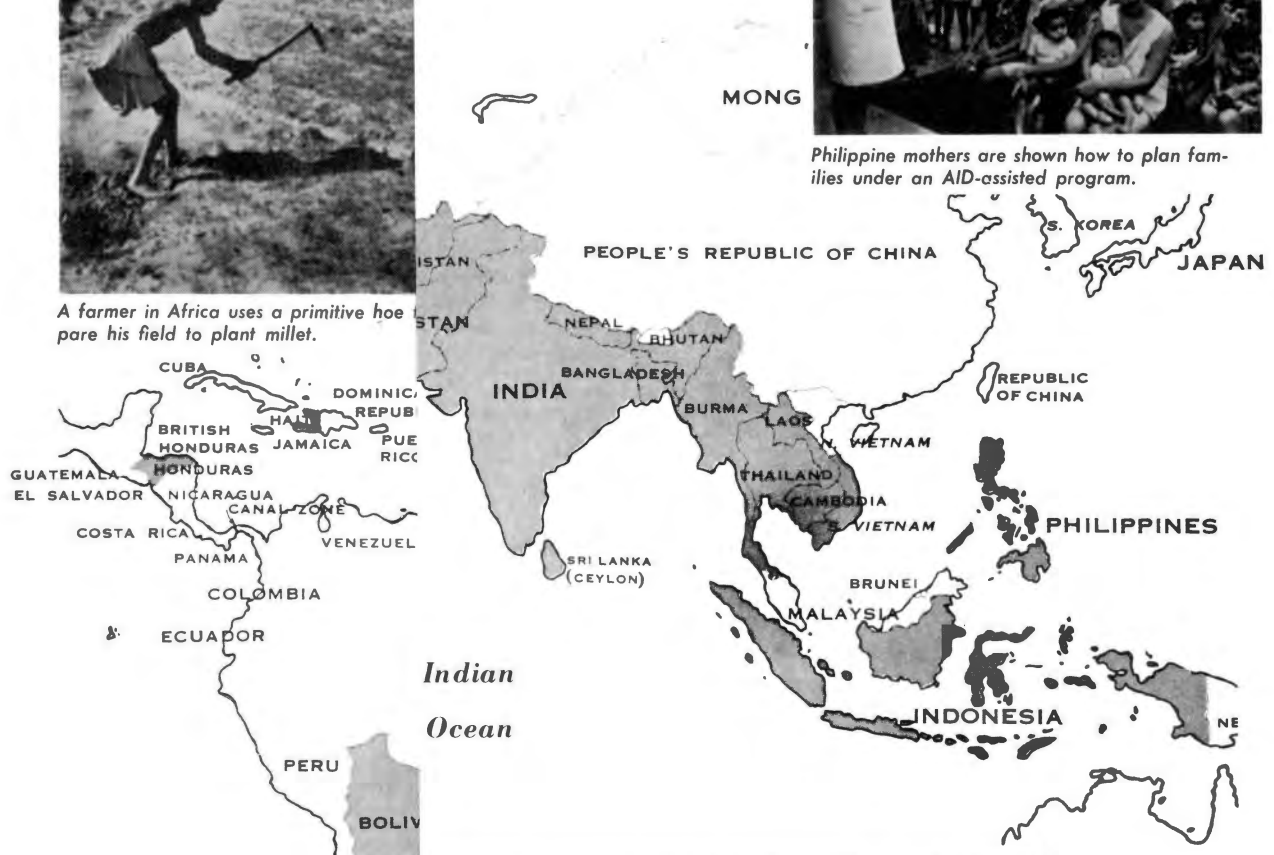
A farmer in Africa uses a primitive hoe to prepare his field to plant millet.

# World

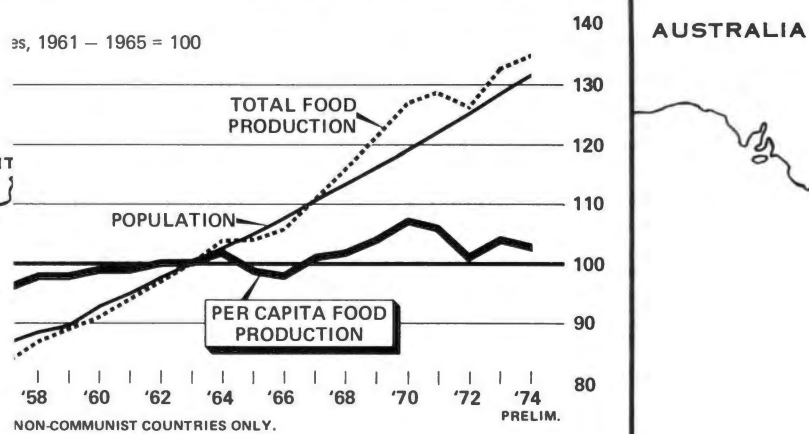
ON OF SOVIET SOCIALIST



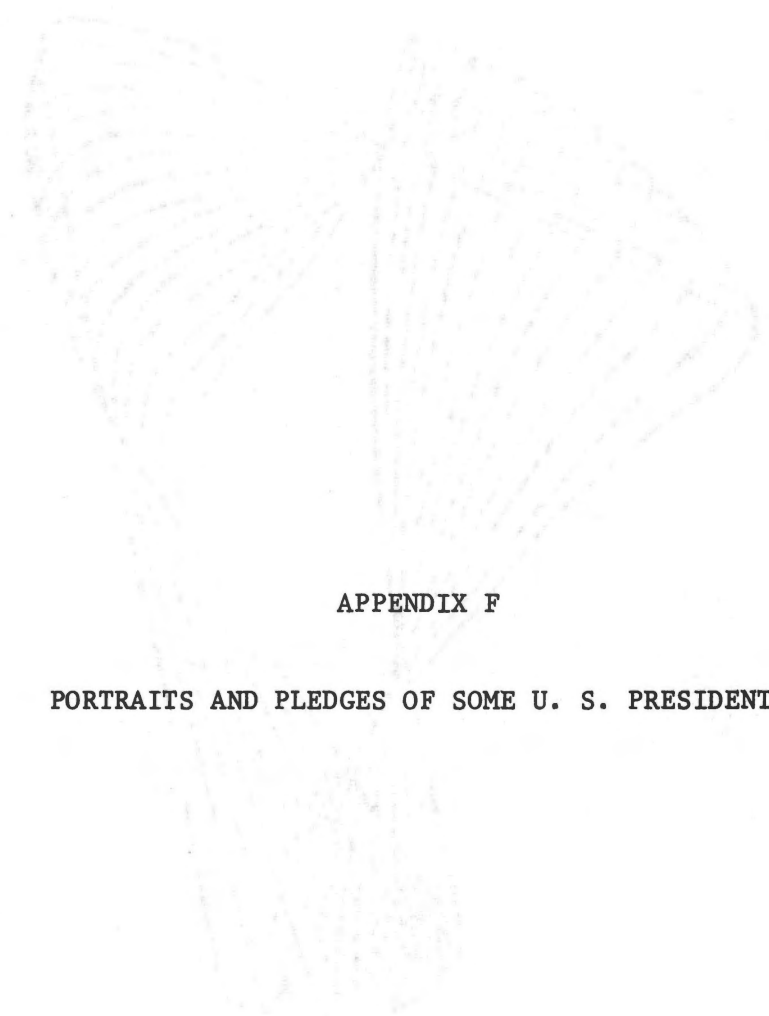
Philippine mothers are shown how to plan families under an AID-assisted program.



## FOOD VS. PEOPLE—THE WIDENING GAP



Production in the developing countries has increased over the years, but population growth has canceled out the gains.



APPENDIX F

PORTRAITS AND PLEDGES OF SOME U. S. PRESIDENTS

ILLINOIS STATE UNIVERSITY  
Thesis  
Department of History



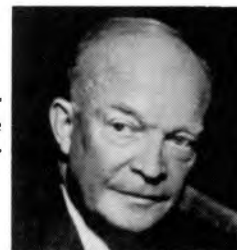


**President Harry S. Truman**

*“I believe that we should make available to peace loving peoples the benefits of our store of technical knowledge in order to help them realize their aspirations for a better life.”*

**President Dwight D. Eisenhower**

*“The achievement of a peace which is just depends upon promoting a rate of world economic progress, particularly among the peoples of the less developed nations, which will inspire hope for fulfillment of their aspirations.”*

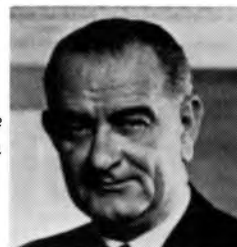


**President John F. Kennedy**

*“To those people in the huts and villages of half the globe struggling to break the bonds of mass misery, we pledge our best efforts to help them help themselves . . . not because we seek their votes, but because it is right. If a free society cannot help the many who are poor, it cannot save the few who are rich.”*

**President Lyndon B. Johnson**

*“The incessant cycle of hunger, ignorance and disease is the common blight of the developing world. This vicious pattern can be broken. It must be broken if democracy is to survive.”*

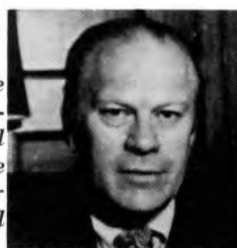


**President Richard M. Nixon**

*“I believe most earnestly that the developed nations of the world cannot long prosper in a world dominated by poverty and that improvement in the quality of life for all peoples enhances the prospects of peace for all peoples.”*

**President Gerald R. Ford**

*“However difficult our own economic situation, we recognize that the plight of others is worse . . . A world of economic confrontation cannot be a world of political cooperation. If we fail to satisfy man’s fundamental needs for energy and food, we face a threat, not just to our aspirations for a better life for all our peoples, but to our hopes for a more stable and a more peaceful world.”*



APPENDIX G

FERTILIZER FOR IMPROVED CROP PRODUCTION



*New fertilizer industries are needed, especially in developing countries, to meet current needs and improve crop production.*

APPENDIX H

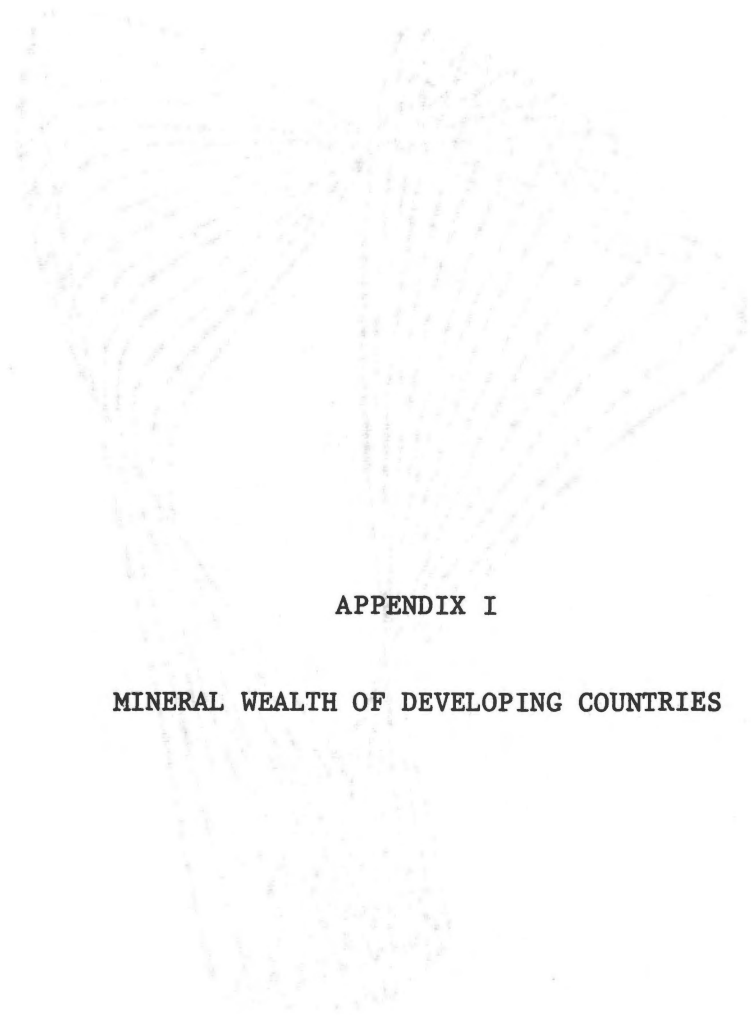
TRADITIONAL METHODS REQUIRING TECHNOLOGIES  
FOR AGRICULTURAL DEVELOPMENT



*Increased food production at a reduced cost will require new technologies suited to Third World labor and capital conditions.*



*Present estimates indicate that the developing countries may need to import as much as 85 million tons of grain by 1985.*

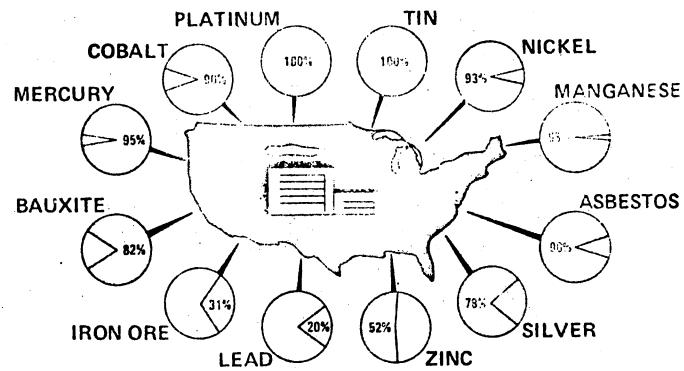


**APPENDIX I**

**MINERAL WEALTH OF DEVELOPING COUNTRIES**

OKLAHOMA STATE UNIVERSITY  
Library  
1000 University Ave  
Stillwater, Oklahoma 74078

## INTERDEPENDENCE FOR U.S. INDUSTRY



BASED ON CALENDAR YEAR 1973 DATA.

*Raw materials from abroad are essential to U.S. industry. Many come from the developing countries.*

*All charts prepared by Statistics and Reports Division, AID.*

VITA

Basiru M. Gwarzo

Candidate for the Degree of

Master of Science

Thesis: A STUDY OF THE VOCATIONAL AGRICULTURE CURRICULUM FOR HIGH SCHOOLS IN THE STATE OF OKLAHOMA, U.S.A., WITH IMPLICATIONS FOR SECONDARY SCHOOLS IN NIGERIA

Major Field: Agricultural Education

Biographical:

Personal Data: Born in Kano City, Kano State, Nigeria, January 6, 1942, to Muhammadu and Halimatu Gwarzo. Married to Saude Iguda; three children--Bello, Sulaiman, and Aishatu.

Education: Graduated from Katsina Provincial Secondary School (now Katsina Government College) in December, 1961; received from the Federal Veterinary School, Vom, the Veterinary Assistant's Certificate in August, 1963; received the Bachelor of Science degree in Agriculture from the New Mexico State University in December, 1969, majoring in Range Science. Completed requirements for the Master of Science degree in May, 1975.

Professional Experience: Veterinary Assistant in charge of Kontagora and Zuru Divisions, 1963-64; Livestock Assistant in charge of Funtua Cattle Control Post, 1964-65; Animal Husbandry Officer in charge of Range Management Projects, Kano State, 1969-72; Senior Animal Husbandry Officer, 1972-73; Acting Principal Animal Husbandry Officer, 1973-74.

Professional Organizations: Society for Range Management; Phi Delta Kappa.